FEEDSTUFFS

★ A WEEKLY NEWSPAPER ★

FOR THE FEED MANUFACTURER, JOBBER, BROKER and DEALER

Volume 28—Number 11 MARCH 17, 1956 1 Year $4, 2 Years $7

Egg-Feed Ratio Declines But Some Ratios Improve

WASHINGTON — A sharp fall-off in the ratio between what farmers received for eggs and what they paid for feed represented the greatest change in the farm commodity-feed price ratios during the month ended Feb. 15. The hog-corn ratio continued to improve, pacing the changes on the plus side of the picture.

The U.S. Department of Agriculture report on farm prices shows that on Feb. 15 a dozen eggs would buy 11.8 lb. of poultry feed, compared with 13.7 lb. on Jan. 15. This ratio is better than the 10.4 in mid-February last year, but not so good as the 20-year (1934-53) average of 12.1. A sharp decline in egg prices was responsible for the less favorable ratio. (Comparisons by regions are shown in the table on page 3.)

The hog-corn ratio improvement was accompanied by slight improvements in the farm chicken-, broiler- and turkey-feed relationships. The dairy products-feed price relationships were less favorable in mid-February than a month earlier.

In mid-February, a pound of live broiler would buy 4.4 lb. of feed. This is a slight improvement over the 4.2 ratio a month earlier, but not up to the 4.9 of a year earlier, the USDA report shows.

The turkey-feed ratio edged up 0.1 of a point to 9.2 at mid-February. This relationship was well above the 7.4 of a year ago on the same date. The farm chicken-feed ratio went to 5.9 on Feb. 15, 0.2 of a point above

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Egg Settings Reach Peak in Delmarva

SALISBURY, MD. — Egg settings last week in Delmarva were the highest in any week since Feb. 16, 1952. Settings at 4,234,000 were 1% above the previous week and also 1% above the same week of 1955.

According to the Delaware-Maryland Crop Reporting Service, broiler chick placements in the area at 3,458,000 for the week ending March 10 were 1% above a week earlier and 15% above the level of a year ago. A slight decrease from a week earlier in inshipments was more than offset by a slight increase in local hatchings and decreased outshipments, accounting for the change in placements.

Chick placements in Delaware totaled 1,811,000 or 5% above the previous week. Egg settings at 2,106,000 were up 3%. In Maryland, chick placements totaled 1,446,000 or 6% below the previous week. Egg settings at 2,203,000 were down slightly.

Birds going to market sold for an average of 22.9¢ lb., compared to 22.5¢ a week earlier. Feed sold for $91.34 ton, only a few cents cheaper than the week before. An improved price for broiler meat made a better

(Continued on page 104)

Big Poultry Output Seen While Policies Indicate Possible Feed Cost Rise

By JOHN CIPPERLY
Feedstuffs Washington Correspondent

WASHINGTON—The nation will, or must, eat high on the second joints and breasts of broilers and turkeys in the months ahead if it is to bail these industries out of their production plans as indicated this week by the U.S. Department of Agriculture's monthly hatchery report.

Hatchery production of broiler chicks in February was up 22% from last year. Output of heavy breed turkey poults was up 75%. Light breed poult production, however, was down 28%.

Numbers of turkey and chicken eggs in incubators on March 1 indicate further increases. Production of chicks for flock replacement, as well as for broiler production, also shows increases.

While these poultry production increases continue, producers and the feed trade should be aware of possible price trends in feed ingredients as influenced by U.S. Department of Agriculture policies.

Some people, reading price signs in the feed market, see potential declines in soybean meal prices. However, they are failing to adjust their ideas to current USDA policies. For one thing, it is now apparent that there will be a "foot-dragging" process in USDA oil export procurement authorizations.

USDA is certainly, according to top policy officials, determined to halt the rise in edible oil prices. Officials will defer or delay procurement of edible oils for the balance of this fiscal year ending June 30, 1956, and also delay buying for the next fiscal year until after Oct. 1, 1956.

These moves are seen as dampening any declines in oilseed meal prices since up to this time oilseed meals have been relatively cheap as edible oils have led the market for oilseed materials up.

At the same time, the poultry industry may have been behind the play in the grain components of their feed supply.

Corn Price

USDA is intent on boosting the price of corn up to or close to the county loan rates. Except for previous commitments, it has halted bin site sales of corn of more than nonstorable grades and is not moving USDA bin site corn of No. 2 yellow to terminals other than those outside the Chicago market.

It appears to some observers here that the buoyant optimism of the broiler and turkey producers is unsupported by known USDA price policies for certain feed ingredients.

It is a political year. USDA administrative officials are aiming their shots at the Corn Belt. They want better price levels for corn and soy-

(Continued on page 104)

CCC Authorized to Buy Storage Bins For Up to 100 Million Bushels of Grain

WASHINGTON—Purchase by the Commodity Credit Corp. of additional standard-type grain storage bins with a capacity of up to 100 million bushels has been authorized by the CCC board of directors to assure adequate storage for the take-over next summer and fall of 1955-crop grains under price support.

Details, including bin specifications, bid due date and other information will be announced later.

By announcing anticipated bin purchases at an early date, as indicated in the U.S. Department of Agriculture of Jan. 20 on storage plans, the USDA said it hopes to provide ample time for preliminary planning on the part of suppliers and others, and the purchase and erection of bins should be early enough to insure adequate space as corn and other grains are taken over.

The extremely heavy movement of 1955-crop corn under price support,

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Farm Bill Provisions Would Raise Feed Grain Supports

By JOHN CIPPERLY
Feedstuffs Washington Correspondent

WASHINGTON — If certain provisions now in the pending Senate farm bill are part of the new farm law when it is finally enacted, the previously announced support levels for 1956-crop oats, barley, grain sorghums and rye will be substantially increased, according to U.S. Department of Agriculture analysts.

The parts of the Senate bill involved include the Hickenlooper amendment, the Daniels amendment to the Hickenlooper amendment and a provision which would raise the corn parity price.

The Hickenlooper amendment was designed to boost the corn acreage allotment for this year and thereby provide some attraction of corn producers to the acreage reserve program of the proposed soil bank. It had been seen by corn producers that the drastic reduction of the 1956 corn allotment to 43.5 million acres would not bring the commercial Corn Belt farmers to make any further acreage cuts this year and they would be deprived of an opportunity to cooperate in the soil bank since they would not first be complying with the acreage allotments.

As this amendment was adopted by the Senate, it fixes a farm reserve base for corn in the commercial Corn Belt of 51 million acres. Further reductions from this in planted acreage for corn would entitle a producer to participate in the acreage reserve phase of the soil bank to the extent of the reductions from the corn reserve base of his farm.

Before the Hickenlooper amendment was agreed upon, Sen. Price Daniels (D., Texas) introduced an amendment to the Hickenlooper proposal. In this he undertook to adjust the price support levels for oats, barley, rye and grain sorghums to a feed equivalent relationship with corn for the 1956 crop.

Since that action, the Senate has restored the dual parity concept as an alternative for the transitional parity in figuring price supports. This means that the dollars and cents corn price support level for this year would be raised by 9¢ bu.

Consequently, under the Daniels amendment, USDA would be required

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FEEDSTUFFS *Features This Week*

UNIDENTIFIED NUTRIENTS: A considerable amount of research has been continuing on unidentified nutrients. Bringing some of the information on this subject up to date is an article on page 50 by Dr. L. C. Norris and A. B. Morrison.

MEDICATED FEEDS: The currently important topic of medicated feeds, with present and future trends outlined, is covered in a report by Dr. H. E. Bechtel on page 20.

SELLING: A carefully planned grand opening adds the latest chapter in a feed retailer's success story reported on page 41. The importance of some of the "little things" in merchandising is brought out in an article on page 78.

OTHER: Cattle aren't the only animals getting hormones in their feed. Oral hormonizing of poultry is described on page 69. Recent research on "sweets for pigs" is reviewed on page 18. New developments in swine nutrition of interest to feed men are summarized on page 72. The value of feed technology training gets further emphasis in a report on page 24.

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★ FEEDSTUFFS ★

A Weekly Newspaper Published by
THE MILLER PUBLISHING CO.
2501 WAYZATA BLVD., MINNEAPOLIS, MINN.
(Address Mail to P. O. Box 67, Minneapolis 1, Minn.)
(Telephone: Federal 2-9575. All Offices Serviced by Bell System Teletype)

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Correspondence regarding subscriptions, changes of address, etc., should be sent to Circulation Manager, Feedstuffs, Box 67, Minneapolis 1, Minn. Single copies 20¢. Subscription rates: One year $4, two years $7, in the U.S., U.S. possessions, Canada and Pan-America. Add $3 a year for postage to other countries. Readers are urged to give prompt notice of change of address and to anticipate future changes by at least two weeks' advance notice. Ask postman for form 22-S. Feedstuffs accepts subscriptions only through its own offices; no subscription solicitors are employed or recognized. Associated publications: The Northwestern Miller, The American Baker, Milling Production, Croplife.

Entered as second-class matter Feb. 25, 1947, at the post office at Minneapolis, Minn., under the Act of Mar. 3, 1879

The controlled circulation of this issue is concentrated in the southwestern states

Help Wanted

A GOOD deal has been said recently about how the feed industry's customers, the nation's feeders, are becoming more and more skilled, more and more efficient, more and more specialized. That can only mean that the industry, as great as its past progress has been, has its work cut out for it if it is to maintain and advance its position of service and leadership in animal agriculture.

The job of taking increasing nutritional knowledge from the laboratories and putting it into profit-making use on the farm is getting to be a pretty complex thing—both the technology and the economics of it—and it promises to become more so. The tools of science, production and merchandising undoubtedly will continue to be improved in order to help meet the challenge of better serving the better feeder. But, it follows, the performance of those tools can only reflect the training and ability and imagination of the persons under whose direction they function.

Growing recognition of the importance of the "man" in management and the "person" in personnel is apparent in all business, particularly in the adoption of more and better training programs, and it is apparent in the feed industry. A good example, of course, is the feed technology program at Kansas State College.

If the feed industry is to have the men it needs, it is going to have to recruit and train and stimulate the right men. Not the least of these in an industry which has science and nutrition as its basis is the technically trained research director, nutritionist or animal or poultry husbandman. While such men already are a vitally important part of the feed business, their role undoubtedly will become even more important. Therefore, it may be appropriate to give more attention to some of the opportunities, requirements and responsibilities of such men.

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AT the last meeting of the American Society of Animal Production, the president of the American Feed Manufacturers Assn., W. E. Glennon, told the teaching section "what the feed industry expects of the animal husbandman." He pointed out that this industry, in the midst of a challenging, scientific era, will offer real opportunities and will have an increasing demand for well trained young men. Also, he noted, with nutritional discoveries and applications being made at a rapid rate, these young men must have the ability and desire to continue to study and learn. They should have such basic qualities as dependability, initiative, ambition, imagination.

But that's not all. The technically trained person should also be a pretty well rounded young man. Mr. Glennon explained that he should have an appreciation of the economics of both feed and animal production; some speaking and writing ability is important; he should have the background and personality to get along with others.

Why are all these things important? Well, suggested Mr. Glennon, one need only look at the responsibilities of a nutritionist in the average feed manufacturing company. In addition to being a nutritionist, he must work closely with production on quality control, with purchasing on ingredient specifications and other problems, and with the sales and service department. "Perhaps," said Mr. Glennon, "you may say that this is too much to expect of one man. Maybe it is, but this pretty well summarizes the actual situation facing the director of research."

A symposium on the nutritionist and his job was part of the last AFMA Nutrition Council meeting. As one of the speakers, Dr. J. E. Hunter of Allied Mills, Inc., brought out similar points. If the research director has an "ivory tower" concept of his job when he is hired, it quickly disappears. Besides being a nutrition and research expert, he must, said Dr. Hunter, be (1) a production counselor, (2) a sales advisor, (3) an advertising censor, (4) a purchasing agent's assistant, (5) a complaint arbitrator, and (6) a top-flight salesman ready to "sell" his ideas to his executives.

"The research director in the feed industry has done much in recent years to help improve the standing of the feed industry," Dr. Hunter pointed out. "His responsibilities are great and will become greater."

The feed industry needs more than well trained nutritionists and research directors, too. For some time it has been making effective use of agriculture graduates in sales and service work. Chances are, however, that even more and better use will be made of such men. Along with better feed, the better feeder is going to require more and better service.

It all adds up to a growing opportunity in the feed industry for some well qualified young men, and to an opportunity and obligation on the part of the industry, if it is to be an increasingly important part of animal agriculture, to train and use such men for profitable service to increasingly capable and cost-conscious farm businessmen.

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What Should It Cost?

IT'S pretty well agreed that nutrition has moved well out ahead of production and sales in the formula feed business. However, that doesn't mean that nutritional developments are going to lag while the industry catches up with its production and distribution problems. It is going to be up to feed men to get their manufacturing and sales and service operations into the same gear as nutrition.

That's one reason why the recent announcement of the study to establish cost standards in the manufacture of formula feeds is of particular significance to the feed industry. (Feedstuffs, March 3.) The Midwest Feed Manufacturers Assn. is sponsoring a research project to determine sets of cost standards for in-plant operations in different size mills. This will be the first such research project in the industry, and it is said to be the first time that jointly sponsored work like this has been undertaken.

Feed production men long have sought definite answers as to just what they should be aiming for in the way of over-all plant costs and costs of unit operations. This study will give them some answers. They will be able to measure the efficiency of their operations against comparable plant standards.

Establishment of cost standards as such isn't the whole story, however. These standards, along with definitions of operations and specific methods of cost analysis, will stimulate and enable manufacturers to figure out just what a particular operation or product now costs them. Many manufacturers admittedly do not now know what a particular handling or processing operation costs. Many do not know what it costs to make a ton of mash, or a ton of crumbles.

In the future they will know. They will be able to analyze and determine their own costs, and they will be able to compare their methods and costs with optimum practical methods and costs as determined and recommended through the research project, which will be conducted by the Midwest Research Institute in Kansas City. Also, it is felt, the study may lead to some improvements in plant and equipment designs.

The project represents a real forward step—one which promises to be of substantial benefit to the industry and its customers.

A FEEDSTUFFS FORMULA FEEDS: HOW'S BUSINESS? FEATURE

Once again, formula feed demand showed signs of swinging into usual spring levels in some areas. However, no particular change from rather dull business was indicated in other areas. Where spring weather already has arrived no particular upsurge was apparent; however, the outlook is still good for a sharp increase in poultry feed trade before long. More signs of this prospect were noted this week. Broiler feed sales continue brisk, following the fast pace of placements. Dairy feed business is holding up well in the northern areas. Ingredient markets were mostly soft, and this tended to curb buying to some extent. The index of wholesale feedstuffs prices dropped 1.1 points to 182 and the feed grain index advanced 2 points to 189.2 in the week ending March 14. (Details on pages 102-104.)

Southwest

Some mills reported a better demand for formula feed in the Southwest this week, while others indicated business was barely steady or slightly reduced. The trend was as mixed as the weather which provided a variety of days from snow to sunshine and unusually high temperatures. The moisture was the best news in the picture, with snow in the amounts of one to three inches on at least two occasions during the week in Kansas, Missouri and Nebraska.

Commodity markets were in an unsettled state, allowing little or no change in formula feed costs. Generally grains were stronger while proteins held to a weaker trend. All vegetable proteins hit lower ground, and animal proteins also started on a downward trend.

Poultry feed demand furnished the main amount of production for southwestern mills this week. Chick feed demand was fairly good, and broiler feed interest remained satisfactory under the influence of stable broiler markets. A similar situation existed in turkeys. Cattle feed demand of all types was quiet, and hog feed interest was at a moderate level although some mixers indicate a fairly good demand under strong promotion.

Operations were reported to be at about a five-day average, with no overtime indicated.

Northwest

Feed business showed an upturn for most manufacturers in the Northwest this week, with some reporting a more substantial gain over the previous week's volume than others.

A chief contributor to improved sales was growing demand for turkey starter feeds which are beginning to boom in trade territories of some mills. Others noted that this buying is just beginning, but they look for a rapid expansion in this line very shortly.

Chick starters also continue to provide a good volume, and baby pig feeds are picking up, too. However, some manufacturers say that demand for the latter is well below a year ago, reflecting farmers' disappointment with hog prices.

Dairy and beef feeds are holding their own, and laying feeds also are reported good in most cases.

Over-all volume is at least as good

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Ful-O-Pep Research Facilities Expanding

RESEARCH FARM—Here is an aerial view of the Ful-O-Pep Poultry Research Farm operated by the Quaker Oats Co. near Libertyville, Ill. New construction, announced recently, will change the farm's appearance over the next four years.

By HENRY S. FRENCH
Feedstuffs Editorial Staff

LIBERTYVILLE, ILL.—An expansion of its research facilities and program, involving the expenditure of $77,000 in the first year, was outlined by the Quaker Oats Co., Chicago, March 7. The announcement was made by Dr. L. A. Wilhelm, manager of poultry feed research, at a press conference at the firm's Ful-O-Pep Poultry Research Farm in Libertyville.

An over-all, integrated change, which will add additional facilities to the current poultry research farm, will also start the development of a completely new and separate turkey research farm. The turkey farm will be developed to the west of the current farm, and will include about five acres of land used for chickens previously. Additional expenditures will be made over a four-year period.

During the press conference, attended by representatives of the trade press, farm papers, radio and television, present research facilities were toured. Twenty brooder houses with 14-week-old pullets being raised in complete confinement were shown. In half of the houses the birds are being raised on five variations of restricted feeding, and the other 10 houses are on full feeding.

Four laying houses, containing approximately 2,000 birds, also were seen. Various feeding tests are in progress, some involving a study on sources and different levels in energy in the ration. In the permanent brooder house 2,500 five-week-old chicks were on feeding tests.

During the discussion period, information also was released about Farm Industries, Inc., a Quaker Oats subsidiary at Decatur, Ala. This northern Alabama operation involves the integration of a processing plant, a hatchery, an experimental breeder unit, experimental broiler units, and hatching egg suppliers.

Improvements Outlined

Improvements at the Libertyville poultry farm call for the following steps:

1. The barn, office and hatchery building is being remodeled to provide for feed storage, a new office and a modernized hatchery room.

2. The former ice house which has served as a feed room is being converted into an egg storage room and laboratory with a refrigerated holding room, an egg cleaner and grader,

(Continued on page 106)

Feeding of Cattle Expected To Continue Large in 1956

WASHINGTON—Feeding of cattle will continue large this year, according to the U.S. Department of Agriculture. However, USDA officials say, cattle are not likely to be fed to as heavy weight and high finish this year as they were last year.

These and other comments were part of USDA's latest report on the livestock and meat situation.

Cattle numbers on Jan. 1 were at a new high, and a further increase in production of beef is expected in 1956 because most of the addition to the cattle inventory was in beef calves and beef steers, the bulk of which will be slaughtered in 1956. Cattle slaughter under inspection was up 7% from 1955 in the first seven weeks of 1956. Marketings of long-fed steers were very large.

Since placements on feed have been reduced, USDA continues, the inventory of fed cattle, which on Jan. 1 was only 1% above 1955, is doubtless now below last year.

Nevertheless, feeding will continue large in 1956 because many of the calves and steers not yet on feed will be placed in feedlots during the year. USDA says cattle are not likely to be fed to as heavy weight and high finish this year as they were last year, when an exceptionally large number of steers were carried to very heavy weights.

Also, USDA said, more cattle go to slaughter off grass, or with limited feeding, than last year. Thus, much of the increase in cattle slaughter and beef output this year will probably be in the intermediate grades.

USDA said prices of the higher grades of fed cattle seem likely to recover somewhat this spring from their February low and are expected to rise seasonally this summer. Prices of middle and lower grades of cattle will probably be at least steady and may advance a little during the spring season when grazing begins. They are likely to decline seasonally thereafter and to remain below last year's prices in most months.

Meanwhile, USDA says, the cyclical increase in cattle production still seems to be slowly grinding to a halt. The number of cows and mature heifers on farms Jan. 1 was unchanged, as a decrease in milk cows offset an increase in beef cows. The inventory of milk heifers and heifer calves decreased 3%, and beef heifers were down by the same percentage.

USDA Takes Step to Slow Down Boom in Oil Exports

By JOHN CIPPERLY
Feedstuffs Washington Correspondent

WASHINGTON — This week the U.S. Department of Agriculture turned down the thermostat on the briskly burning fire under edible oil exports.

This was detected in an announcement of a procurement authorization for either cottonseed or soybean oil for Chile under terms of Public Law 480. It discloses that the full amount of the 79-million-pound authorization for edible oils for Chile would be deferred until the start of the next fiscal year. That would mean that more than 52 million pounds of these commodities would not be available for procurement until after July 1, 1956.

However, inside information discloses that none of this deferred procurement will be made available under USDA procurement authorizations until after Oct. 1, 1956.

Observers say this means that USDA wants to halt the runup in edible oil prices at this time and hold back some reserve buying power to meet the new oilseed crop which will be harvested later this year. USDA oil export authorizations under PL 480 have touched off a violent speculative market in cottonseed and soybean oils. Trade reports indicate that foreign requirements under PL 480 for the edible oils and lard have exceeded U.S. export availabilities.

Forecast Recalled

Feedstuffs reported a few months ago that meeting of all edible oil demands from all sources, domestic and foreign, would require the crushing of every pound of available oilseed stocks and leave an unsold balance of oilseed meals beyond the capacity of the world to consume.

That USDA is now willing to dampen the speculative fire under the edible fats and oils may be a strong indication of confirmation of this previous report.

USDA officials also report they expect a reduction in anticipated soybean exports from the U.S. this year to about 60 million bushels from the previous USDA estimate of 70-75 million.

That soybean exports would decline as bean prices advanced is a routine conclusion. But cutting back oil procurement authorizations at this time can do little else than halt the runup in oil prices at this time, check the advance in beans and probably transfer the market leadership to soybean meal. This could mean that bean exports would stick close to previous export levels estimated by USDA.

Another factor in the situation is the information that the state department is literally putting the heat

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IKE GETS FEED TECH BROILERS

WASHINGTON—President Eisenhower was among the first persons to receive broilers raised on the first feed produced at the new Kansas State College pilot feed mill. The White House received a special shipment of 12 chickens with the compliments of K-State and the feed industry. Other chickens were sent to members of the industry feed technology advisory committee, to government officials in the region and to others interested in the establishment of the feed program at Kansas State. The chickens were packed by Seymour Foods, Inc., of Topeka.

Farm Commodity-Feed Price Ratio

	U.S.	New Eng.	Mid-Atl.	East North Cent.	West North Cent.	South Atl.	East South Cent.	West South Cent.	Mount.	Pac.
CHICKEN-FEED—										
Farm Chickens:										
February, 1956	5.9	5.3	5.3	6.3	5.4	5.6	5.6	5.0	5.1	4.4
January, 1956	5.7	4.9	5.0	6.3	5.2	5.6	5.5	5.2	4.8	4.4
February, 1955	4.9	5.0	5.6	4.9	4.3	4.8	4.5	4.3	4.0	4.1
Average (1943-53)	6.7									
Average (Feb., 1944-53)	7.0									
Broilers:										
February, 1956	4.4	4.5	5.1	4.7	4.7	4.4	4.1	4.3	5.2	4.5
January, 1956	4.2	4.2	4.9	4.5	4.7	4.1	4.0	4.1	5.3	4.5
February, 1955	4.9	5.4	5.7	5.0	4.9	4.7	4.3	4.8	5.1	4.8
TURKEY-FEED—										
February, 1956	9.2	8.9	10.4	9.9	9.8	8.5	8.9	7.6	8.6	7.6
January, 1956	9.1	8.7	10.6	9.8	10.0	8.4	9.5	8.1	8.4	7.4
February, 1955	7.4	7.8	8.9	8.1	8.5	7.3	8.0	6.5	6.9	6.5
Average (1944-53)	9.2									
Average (Feb., 1944-53)	9.6									
EGG-FEED—										
February, 1956	11.8	11.9	12.7	11.6	11.0	12.5	12.9	12.3	11.3	11.0
January, 1956	13.7	13.9	15.3	13.6	12.3	15.1	15.4	14.3	13.0	12.7
February, 1955	10.4	10.9	11.2	10.1	10.6	10.3	10.0	9.7	9.6	10.6
Average (1934-53)	12.1									
Average (Feb., 1934-53)	11.2									

	U.S.	North Atl.	East North Cent.	West North Cent.	South Atl.	South Cent.	West
MILK-FEED—							
February, 1956	1.37	1.31	1.32	1.41	1.62	1.57	1.39
January, 1956	1.42	1.34	1.37	1.44	1.66	1.66	1.41
February, 1955	1.23	1.21	1.15	1.25	1.44	1.38	1.28
Average (1934-53)	1.28						
Average (Feb., 1934-53)	1.31						
BUTTERFAT-FEED—							
February, 1956	22.0	...	20.0	24.1	...	16.1	18.2
January, 1956	23.2	...	20.1	24.3	...	16.3	18.1
February, 1955	19.6	...	17.9	21.4	...	14.1	17.1
Average (1934-53)	23.5						
Average (Feb., 1934-53)	24.1						

	U.S.	North Cent.
HOG-CORN—		
February, 1956	10.2	10.2
January, 1956	9.4	9.3
February, 1955	11.7	12.0
Average (1934-53)	13.2	14.0
Average (Feb., 1934-53)	13.3	14.7

NOTE: Ratios computed at midmonth by U.S. Department of Agriculture. Ratios represent number of pounds of poultry feed equal in value to 1 lb. live farm chicken, turkey or 1 doz. eggs; pounds broiler growing mash equal to 1 lb. broiler; pounds concentrate rations equal to 1 lb. milk or butterfat; bushels of corn equal to 100 lb. hog. Increases in ratios are favorable to the feeder.

KEY TO GEOGRAPHICAL DIVISIONS

Here is a guide to the states included in the geographical divisions listed in the accompanying commodity-feed price ratios:

New England: Maine, New Hampshire, Vermont, Massachusetts, Rhode Island, Connecticut.

Mid-Atlantic: New York, New Jersey, Pennsylvania.

North Atlantic: New England and Mid-Atlantic states combined.

East North Central: Ohio, Indiana, Illinois, Michigan, Wisconsin.

West North Central: Minnesota, Iowa, Missouri, North Dakota, South Dakota, Nebraska, Kansas.

North Central: Combination of the two foregoing.

South Atlantic: Delaware, Maryland, Virginia, West Virginia, North Carolina, South Carolina, Georgia, Florida.

East South Central: Kentucky, Tennessee, Alabama, Mississippi.

West South Central: Arkansas, Louisiana, Oklahoma, Texas.

South Central: Combination of the two above.

Mountain: Idaho, Wyoming, Colorado, New Mexico, Arizona, Utah, Nevada.

Pacific: Washington, Oregon, California.

West: Combination of the two above.

Staley Milling Co. Remodels Plant In East St. Louis

EAST ST. LOUIS, ILL.—The plant of the Staley Milling Co. in East St. Louis, Ill., will reopen April 1 after converting to a push-button operation. The project represents a major remodeling of the milling plant at 33rd and Brady Ave.

The new plant utilizes bulk ingredient storage and handles weighing and mixing automatically through a central control room. Electronic equipment selects ingredients from designated bins, weighs the proper amounts into the central batch mixer and controls the mixing process through any desired number of cycles.

Capacity of the plant is 25 tons per hour, an increase from the previous average of 20 tons. This gives the Staley Milling Co. a total capacity of 70 tons per hour. Last August the company completed a new push-button mill in Kansas City, having a capacity of 45 tons per hour.

In converting to bulk handling of ingredients, 15 storage bins were installed at East St. Louis. Besides the equipment for handling material through the plant in bulk and the mixing controls, the unloading facilities also were remodeled but remain in the same general pattern and location as before.

The remodeling of the unit at East St. Louis will mean quicker and more efficient service for the company's customers in eastern Missouri and the area east of the Mississippi River, Thomas W. Staley, general manager of the company, said. The East St. Louis plant was shut down for only a few weeks during the rebuilding as most of the work was done while operations were continued. Customers were supplied from the Kansas City mill during the brief shut-down time.

Lyman Ketcham is manager of the East St. Louis plant of the company. Lou Kelso is mill superintendent.

Walter Judd to Speak At N. W. Feed Meeting

MINNEAPOLIS—Dr. Walter Judd, U.S. representative from Minnesota's fifth congressional district, will be the speaker at the April 5 meeting of the Northwest Feed Manufacturers Assn. in the Calhoun Beach Hotel. The meeting day has been changed from the normal Monday to Thursday.

Dr. Judd will present his views of Washington and world events.

A former medical missionary in China, Dr. Judd returned to the U.S. in 1938 to alert the country to the danger from the Japanese arms buildup. He established a medical practice in Minneapolis until 1942 when he was urged to run for congress.

A cocktail hour starting at 5:30 will precede the 7 p.m. dinner.

The meeting schedule of the association for next season has been announced as follows: Sept. 10 (Nutrition Short Course Meeting), Oct. 22, Dec. 7 (dinner dance), Jan. 21, Feb. 25, April 1 and May 13.

Multiwall Bag Prices Increase

NEW YORK — Price increases in multiwall paper bags have been announced by several manufacturers.

Generally, the new prices are effective immediately for all new orders and will be effective April 1 for orders on the manufacturers' books as of the announcement dates.

Also announced at the same time were increases in bag printing charges.

Most of the bag manufacturers announced a 5½% increase in the price of multiwalls and an increase of 75¢ per thousand on printing. One bag firm raised its bag prices by 6½%, while two other firms said no announcements of price increases have been issued by them as of March 12.

The announcements of increases in multiwall paper bag prices and also printing follow by a few weeks the price increase announcements affecting kraft papers. The last boost in multiwall sack prices took place about five years ago. Manufacturers pointed out that recent considerable increases in freight, labor and raw materials costs have made it impossible to maintain multiwall bag prices at the old levels.

Victor Borge and Feed Tech Course to Star Before K. C. Feed Club

KANSAS CITY—Victor Borge and the Feed Tech course at Kansas State College will be the stars of the March 20 meeting of the Kansas City Feed Club. Neither will be present in person, but will be liberally displayed on movie film.

Mr. Borge and the College meet not entirely by accident, since Mr. Borge, in addition to his major profession of entertainment, is proprietor of ViBo Farms, Southbury, Conn., where he raises, dresses and freezes an average of around 8,000 Rock Cornish Game Hens weekly.

In the interests of making known to a wider audience the merits of the Feed Tech program at Kansas State College, Mr. Borge, at a press conference in Kansas City March 19, will be presented with some poultry feed produced in the new college mill. The following evening, this presentation will be shown on film to the Kansas City Feed Club, together with the filmed record of the dedication ceremonies at the college last November.

A good attendance is expected at the feed club meeting which will be held at the Wishbone Restaurant in Kansas City. Cocktails will be served at 6 p.m. and a family-style fried chicken dinner will follow at 7.

Fish Meal Price Is $1.95 on West Coast

A story in Feedstuffs March 3 which reported on herring meal prices and prospects from Vancouver, B.C., said that the meal price had dropped to $1.75 per protein unit, f.o.b. Vancouver.

This price does not apply to meal at Vancouver and is applicable only to meal from Prince Rupert or Port Edward, B.C., which can be sold only in the Midwest. The material originating at those two points at $1.75 cannot be sold in Washington, Oregon, California, Utah, Idaho and a few other states, trade sources point out.

The asking price at Vancouver is still $1.95. The Midwestern price of $1.75 is still being quoted this week.

2 NEW FEED SUPPLEMENTS ...from the SEA

From research and practical feeding tests, the nutritionists of Philip R. Park, Inc., have developed two new *Sea Power* feed supplements. These products increase the adaptability of the vital nutritional elements from the sea into feed formulation and manufacture.

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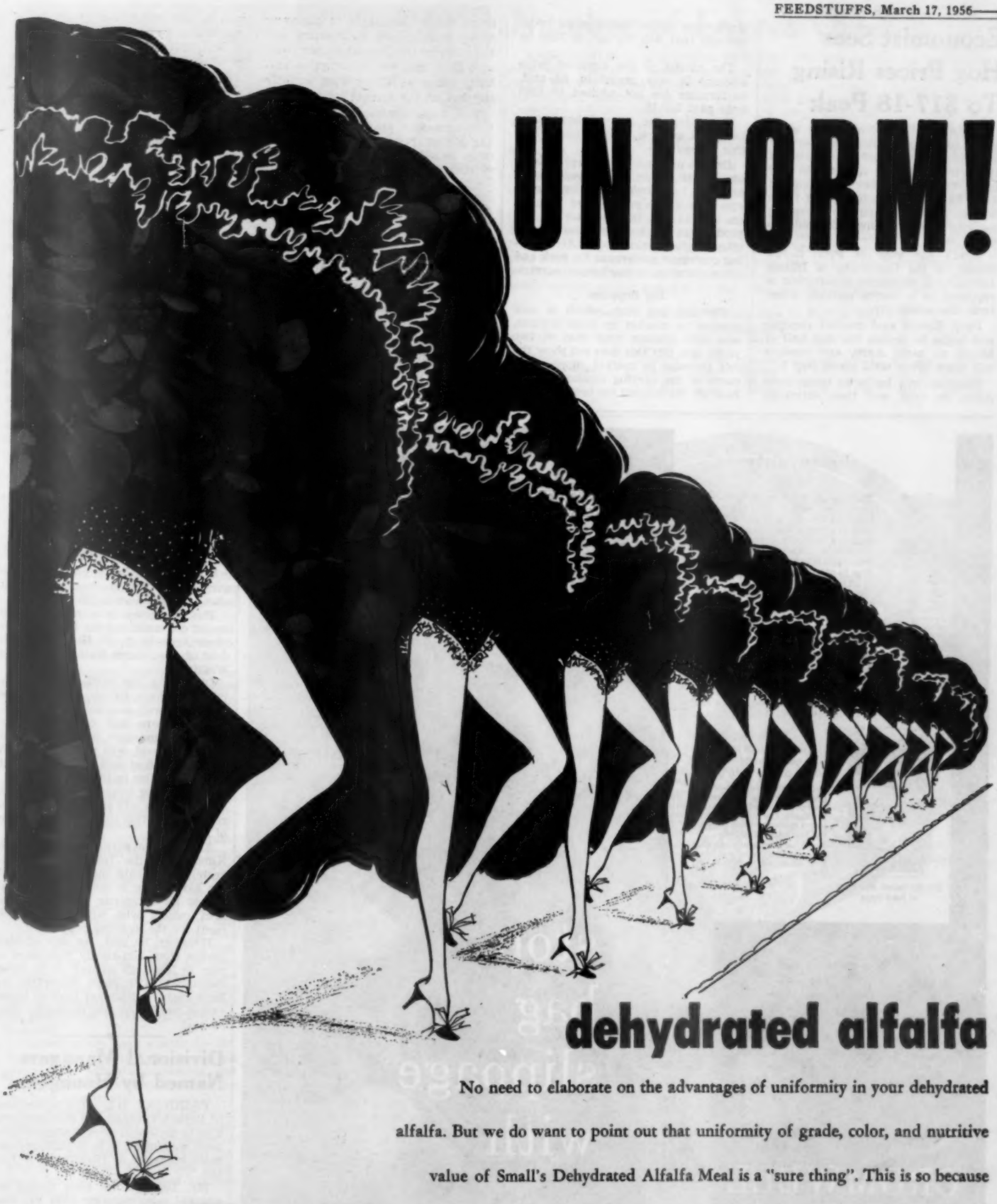

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Economist Sees Hog Prices Rising To $17-18 Peak

URBANA, ILL.—Hog prices seem likely to climb to about $17 or $18 cwt. at their summer peak; then, if there is no further increase in hog production, prices next fall should be $1 to $2 higher than in 1955. If there is even a moderate cut in the spring pig crop, the price increase could be much more.

That's the view of Prof. L. H. Simerl of the University of Illinois agricultural economics department as reported in a recent outlook letter from the university.

Prof. Simerl said market receipts will begin to decline the last half of March or early April, and receipts will work lower until about July 1.

Supplies will be large until early April, he said, and then shrinking marketings should start prices on an uptrend that will top out in June or July.

The timing of the expected price advance is very uncertain, he said, so farmers are not advised to hold hogs past 230 lb.

Reviewing the general hog situation and outlook, Prof. Simerl had this to say:

Recent prices for hogs were about one fourth lower than a year ago—and one half lower than two years ago. The lower prices were brought on by (1) the big increase in hog production, (2) increasing outputs of other high-protein foods, (3) declining consumer preference for pork and (4) an increase in marketing margins.

Big Supplies

The fall pig crop, which is now moving to market in large volume, was 26% greater than that of two years ago. But this does not show the full increase in market supplies because of the varying number of gilts held off the market for breeding purposes. Actual slaughter of hogs was about 40% greater in January and February of this year than two years ago. How can we expect price stability when we throw such variable supplies on the market?

This huge increase in hog production depressed prices in two ways: (1) Retail prices were reduced in order to sell the much larger amounts of pork that farmers have produced. Retail prices of pork, which averaged 58¢ a pound in 1953 and 1954, were down to 43¢ in December. (2) Marketing margins widened out. The average marketing margin, which was 18½¢ per pound of pork in 1953 and 1954, increased to 26¢ in the last quarter of 1955.

Marketing margins normally increase a little when supplies are large. In recent years, however, rising costs for labor have added to the marketing margin. According to the USDA, labor costs for marketing a ton of food have increased about 3% a year since 1951. Very little of this increase can be attributed to more or better marketing services.

Beef, veal, eggs, poultry, and cheese—all high-protein foods—compete with pork for the consumer's grocery money. The production of beef and veal increased 61% in four years from 1951 to 1955. Output this year is up another 10% over early 1955. Production of eggs, poultry, and cheese has increased much faster than population during the past 15 years. We now have 418 eggs per person each year compared with an average of 296 in 1935-39. We have 27 lb. of poultry compared with 15 before the war. And we have 8 lb. of cheese per person compared with 5 in the prewar years.

Consumer preference for pork slipped to the lowest level on record in 1955. Where consumers in 1947 spent more for pork than for beef, in 1955 they spent 30% less for pork than for beef.

From this review of facts it is clearly evident that several powerful forces have combined to depress hog prices. When these fundamental forces are changed, prices of hogs will recover. The first change will be the decline in market receipts that will begin in the last half of March or early April.

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1956 Cattle Prices Expected to Average Near 1955 Levels

WICHITA — Cattle prices, on the average, in 1956 are expected to be about the same as in 1955.

This prediction was made at the recent convention of the Kansas Livestock Assn. by A. W. Kincade, president of the Fourth National Bank in Wichita.

Discussing the cattle outlook for the immediate future, Mr. Kincade said that, with continued heavy production, there will continue to be downward pressure on prices. Total output, he said, will probably exceed 1955 in the first half of this year but may be smaller in the second half.

Over a long range period, he said, meat animals will likely contribute a rising proportion of the total income of farmers.

Another convention speaker, Ralph Knudsen of the International Harvester Corp., said the future market for agriculture is good, and he presented an optimistic picture for the beef raisers who will help furnish meat for the growing population.

However, he said, the day of high profits from non-steady customers is past in livestock as well as in other businesses. It's more important to have steady customers than to make excess profits on the unsteady ones, he said.

Divisional Managers Named by Honeggers'

FAIRBURY, ILL.—The promotions of Robert Turnage and Kenneth Jenkins to divisional sales managers have been announced by L. S. Rolf, general sales manager of Honeggers' & Co., Inc.

Mr. Turnage has been named divisional sales manager over the central division. He started with Honeggers' in 1951 as district manager of the Centralia, Ill., district. He was later appointed to the position of equipment manager.

Appointed divisional manager of the Eastern division was Mr. Jenkins. He was special assistant in the Honeggers' sales department. Mr. Jenkins came with Honeggers' in 1948. Both men will continue to headquarter at Fairbury.

Toledo Club Meets

TOLEDO, OHIO—A dinner meeting of the Toledo Feed Club was held March 12 in the Rit Nite Club with Admiral Robert Cary (USN-Ret.) speaking on the St. Lawrence Seaway.

NEW OFFICERS—New officers of the Distillers Feed Research Council were elected at the March 7 Distillers Feed Conference in Cincinnati. They are, left to right, seated, Frank M. Shipman, Brown-Forman Distillers Corp., Louisville, first vice president; C. L. Cray, Jr., Midwest Solvents Co., Inc., Atchison, Kansas, president; (standing) Howard T. Jones, Washington, D.C., secretary; Millard Cox, Louisville, treasurer; E. P. Henderson, Schenley Distillers, Inc., Cincinnati, second vice president, and L. E. Carpenter, Cincinnati, executive director.

Number of Layers Off 2%

WASHINGTON — The number of hens and pullets of laying age on farms March 1 totaled approximately 319 million, according to the U.S. Department of Agriculture. The total was 2% less than a year earlier.

USDA said that the disappearance of layers from Feb. 1 to March 1 was 9.9 million, compared with 7.4 million last year and the average of 9.3 million.

During February, the nation's laying flock averaged 324 million layers, 1% less than in February last year. Numbers of layers compared with a year earlier were down 4% in the west north central states, 2% in the south central region and 1% in the West. Numbers in the east north central and south Atlantic states were about the same as a year earlier, and in the north Atlantic states about 1% above last year.

Farm flocks laid 5,134 million eggs in February—5% more than in February last year even though the total flock was smaller. The extra day in February this year accounts for about 4% of the increase over a year earlier, USDA said.

The rate of egg production in February was 15.9 eggs per layer, compared with 14.9 eggs last year. USDA said the extra day in February this year was mainly responsible for the 6% increase in eggs per layer.

Hens and Pullets of Laying Age on Farms, March 1

(000's omitted)

Year—	North Atlantic	East North Central	West North Central	South Atlantic	South Central	Western	U.S.
1945-54 (average)	53,985	70,945	105,153	34,444	64,160	35,731	364,423
1955*	55,745	63,691	91,115	31,524	46,610	36,083	324,767
1956	56,363	63,320	85,500	31,428	46,061	35,612	318,784

*Revised.

House Sub-Committee Report Criticized By Cash Grain Commission Spokesmen

WASHINGTON—A group of grain trade representatives, smarting under the recent criticisms by the house sub-committee on appropriations for agriculture struck back at the allegedly unfair conclusions reached in the sub-committee's report.

Frank Higgins, chairman of the Federation of Cash Grain Commission Merchants Associations, assisted by the secretary of that organization, Ralph Hegman, Kellogg Commission Co., Minneapolis, led the group which criticized the sub-committee's report. Mr. Higgins is president of the Frank H. Higgins Co., Minneapolis.

Their chief attack was on that section of the report which contained investigators' comments that Commodity Credit Corp. offices could make more advantageous sales of CCC grain than through cash commission merchants. Mr. Higgins denounced that statement as a "one-sided curious mixture of half-truth and untruth from an unnamed government employee." Mr. Higgins hit at the core of this statement and its obvious connotations saying that since the government has taken over a large share of the private grain trade, "it would be only nominally more expensive for the government to take over the whole business."

Market prices were quoted by Mr. Higgins, to dispute the unnamed government official's statement and the inferential conclusion drawn by the staff investigator.

Mr. Higgins selected from the house sub-committee report some phraseology which he said tags the report as "callous" and below the expected dignity of an official government document from so consequential a house committee.

He aimed another hot barb at another phrase in the report which again quoted an unidentified CCC official as asking why "the government should support them? (cash commission merchants)." Mr. Higgins threw back the same question and pointed out that the cash commission merchants did not ask "government support."

Mr. Higgins reserved his most potent critical fire for the section of the committee report which stated in part that "it would appear that substantial savings could be realized if commodity offices merchandised their own grain." Even before Mr. Higgins appeared before the committee this statement had raised objections from other sources in the private and cooperative grain trade. He asserted that there is no evidence to support such a statement. A projection of this type of thinking would be for the federal government to enter into the production of food from government farms to provide food for soldiers and sailors and federal government employees, Mr. Higgins said.

Mr. Higgins asked the committee to reject the findings of its investigators as stated in volume 1 of the house sub-committee on agricultural appropriations report.

Other witnesses, besides Mr. Higgins and Mr. Hegman, who appeared were: Wendell H. Lenton, manager, Farmers Elevator Co., Stewartville, Minnesota, representing the Farmers Elevator Assn. of Minnesota; J. V. Pappenfus, J. V. Pappenfus Elevators, Melrose, Minn., representing a group of independent and cooperative elevators; S. C. Masters, Masters-Kelley Grain Co., Kansas City, and Warren Root, Kansas City, both representing the Kansas City Grain Commission Merchants Assn.; D. O. Milligan, E. A. Milligan & Sons, Des Moines, representing the Des Moines Grain Commission Merchants Assn.; Wyman Schaeffer, Elbow Lake Cooperative Grain Co., Elbow Lake, Minn., and John E. Brennan, John E. Brennan Co., Chicago, representing the Chicago commission association.

BREWERS DRIED GRAINS PRODUCTION (tons)

The Production & Marketing Administration reports the following statistics on brewers dried grains:

	1954-55 Monthly	1954-55 Cumulative	1955-56 Monthly	1955-56 Cumulative
October	16,300	16,300	18,400	18,400
November	14,300	30,600	15,500	33,900
December	17,100	47,600	16,900	50,800
January	16,200	63,800	*17,600	68,400
February	16,300	80,100	.....	.....
March	19,600	99,700	.....	.....
April	22,200	121,900	.....	.....
May	25,100	147,000	.....	.....
June	25,000	172,000	.....	.....
July	23,500	195,500	.....	.....
August	22,600	218,100	.....	.....
September	20,300	238,400	.....	.....

*Preliminary.

Stocks of brewers dried grains on hand at plants and warehouses Jan. 31, 1956, amounted to 3,000 tons compared with 3,600 tons Dec. 31, 1955, and 4,000 tons Jan. 31, 1955.

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STAR BRAND PULVERIZED MIXED FEED OATS
CORN OATS PELLETS (Corn-Oats)
ENERGEE PULVERIZED OATS
MIXERS' PULVERIZED OATS
MIXERS' COARSE GROUND WHITE OATS
MIXERS' PELLETED OATS
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OAT FEED
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PLAQUE—Elmer Winterscheidt (right), president of the Winterscheidt Milling Co., Seneca, Kansas, receives a testimonial of thanks from the Midwest Feed Manufacturers Assn. for his service as president in the past year. The presentation was made by Oscar Straube, Pay Way Feed Mills, Kansas City, during the banquet at the recent Midwest convention.

MILKMAIDS—Wearing gloves to avoid complaints of cold hands while pretending to milk Shanghigh Exec. Miss London, Ohio's champion milk producing cow, are LaVonne Bond and Billie Bischoff, both of Cincinnati. The cow was one of two exhibited in the lobby of the Hotel Sheraton Gibson March 7 in connection with the annual conference sponsored by the Distillers Feed Research Council. Miss London, owned by Charles and James Lewis Farms, Hamilton, Ohio, produced 24,350 lb. of milk in 1955.

WINNERS — Ralston Purina Company's outdoor poster featuring "good eating—good eggs" won first award in the agricultural classification at the 24th annual competition of Outdoor Advertising Art, sponsored by the Art Directors Club of Chicago. Second and third awards also went to Purina. Third grand medal award—went to the Ken-L-Ration Division, Quaker Oats Co., for its sign entitled "Inside America's Happiest Dogs!" Lipscomb Grain & Seed Co., Springfield, Mo., won second award in the poster campaign division of the fourth annual local outdoor advertising contest, sponsored by the Outdoor Advertising Association of America, Inc. The Purina agency was the Gardner Advertising Co.; Needham, Louis & Brorby, the agency for Ken-L-Ration, and the Pioneer Advertising Co. is the Lipscomb agency.

Camera Views of the News

UNUSUAL BUILDING TECHNIQUE — Construction of new administrative and production buildings at Richardson Scale Co., Clifton, N.J., included an interesting example of time-saving and planning when a new building was erected around the one it was replacing. The result was no loss of production time in the company's manufacturing program. The new building was started over one which housed the company's machine shop (left). During the course of construction the old building served as scaffolding for work on the new one. When the new building was completed (right), the old one was torn out from under it.

Dr. L. M. Reedy

DIAGNOSING—At work in the recently established Burrus Feed Mills' Poultry Diagnostic Clinic is Dr. Lloyd M. Reedy, director of the laboratory which is located in the Farmers' Branch Animal Clinic, just north of Dallas, Texas. The first quarterly report has just been issued by Dr. Reedy, indicating an increased incidence of anemia and a decreased incidence of coccidiosis. Dr. Reedy's report shows that among laying stock analyzed at the laboratory, leukosis was present in 24% of the birds and cholera had a 14% incidence. Among broilers anemia was most frequent, with a 30% incidence. Hemorrhagic enteritis had a 24% incidence among turkeys studied, and typhoid was present in 21% of the cases diagnosed.

VIRGINIA NUTRITION SCHOOL—In the picture on the right are three of the men attending the recent Virginia Nutrition School for Feed Men in Roanoke. All three are from Harrisonburg, Va. Left to right are Charles McAllister, Buckingham Corp.; Olin S. Sanger, broker-jobber, and Raymond M. Hilbert, Buckingham Corp. In the other picture are participants in a panel discussion at the school. Left to right are R. F. Bruce, feed inspection supervisor, Virginia Department of Agriculture; M. F. Elmore, extension dairyman at Virginia Polytechnic Institute; Paul M. Reaves (standing) of the VPI dairy science department, chairman of the VPI committee for the school; D. G. Green, Nitrogen Division, Allied Chemical & Dye Corp., New York, and D. V. Frost, Abbott Laboratories, North Chicago, Ill. (A news report on the school appears on page 30.)

"I consistently recommend Lederle products..."

says **FLOYD N. HUDSON**
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"...they're dependable, they do what Lederle says they'll do. The farmers who buy them are always more than satisfied with the performance of these drugs."

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"It is important to a dealer like me to have his merchandise backed up by a solid advertising campaign such as Lederle's. Farmers are half-sold before they've even tried the product, and it does help sales."

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UNCLE TOM'S FEED FABLES

I think it was a guy named Demosthenes who used to walk along the shore of the ocean over in Greece with his mouth full of pebbles, a talkin' to himself. He wasn't interested in what he was sayin', but how he said it, and he got to be one of the greatest speech makers of all time. I guess he spit the pebbles out when he was talkin' to other people—anyway, I hope so. I always wondered if it was really true and kinda doubted it in fact. I've known lots of guys that had a mouthful of tobacco most all the time and it sure didn't make them talk any better . . . or smell any better either as far as that goes.

I think what they were tryin' to get across was that if you've got a handicap, there are ways to beat it.

Some of our best singers practice in front of a mirror so they can see what they look like to other people and it's a good idea. A fella looks at himself every morning when he shaves and he sure makes some screwy faces. At least I do. Just pretend your talkin' to a customer some time in front of that mirror. Be real honest about it and just be your natural self. First few times I tried it I said, "Gosh! Who'd want to buy from that sour puss?"

March 1 Condition of Range Below Normal For 17-State Area

WASHINGTON — Range condition in 17 western states averaged 68% of normal March 1, down 3 points from the Feb. 1 and March 1, 1955, levels, and 7 points below the 10-year 1945-54 average, it is reported by the U.S. Department of Agriculture.

Winter grazing in Montana, North and South Dakota, Wyoming and Nebraska was restricted by snow covering during the first three weeks of February, with milder weather in late February and early March opening some winter grazing grounds. Supplemental feeding of livestock was rather heavy in these states the past month, with local hay shortages developing.

In the Central Plains of eastern Colorado, southern Nebraska and Kansas, pastures and ranges supplied limited grazing, between storms, with considerable feeding and some shortage of hay and other feeds developing.

Oklahoma has short old grass and ample soil moisture to start new feed, with adequate hay and other feeds except in the northwest, USDA reports. Texas has ample moisture in the eastern half of the state to make new feed, but the western half has dry conditions, short feed and heavy supplemental feeding. Precipitation is badly needed to make new grass. New Mexico has good old grass and fair soil moisture in supplemental feeding increased the past month.

In the Northwest, snow and rain covered much of Idaho, eastern Oregon and Washington, necessitating more than usual feeding and some hay shortages. The pastures of western Oregon and Washington were set back by heavy rains. Utah and Nevada had fairly favorable grazing conditions during February with better soil moisture conditions than a year ago.

Arizona ranges have fairly good feed but are dry. In California, new feed developed slowly due to continued cold weather, but has ample moisture, except in the south, to make new feed. Wheat pastures supplied practically no feed in the Great Plains sections.

USDA reports that cattle and calves have wintered in generally good condition, with light death losses. There are a few thin cattle in local areas. Generally in snow covered sections and areas of short range feed, cattle have been maintained by supplemental feeding with about the usual shrink. Marketing of fed cattle continued heavy during the past two months, but the marketing of other cattle and calves has been on a little smaller scale than a year ago.

The Jan. 1, 1956, cattle inventory estimates showed 43,759,000 cattle and calves in the 17 western states, which is about 45% of the U.S. total. The West (17 states) had 57% of the nation's beef cattle and 62% of the beef cows.

Sheep on the western ranges have been maintained in good condition, with light death losses, according to the USDA report. Some feeding was necessary on the winter ranges in the northern states, with local water shortages and short feed on desert ranges in parts of Wyoming, Utah and Nevada. Texas sheep are in fair to good condition, with dry, short range feed necessitating feeding in the western part of the sheep section.

The USDA report is based on returns from stockmen in the various states who submit reports giving their judgments as to current conditions of livestock, ranges and general livestock matters.

SCORES 198½ POINTS OUT OF POSSIBLE 200!

Here's Arbor Vista's Atta-Boy, highest scoring obedience dog at the 15th annual all-breed show of the Rubber City Kennel Club in Akron, Ohio. This outstanding Belgian Sheepdog is owned by Alfred Schneider of Mansfield, Ohio. Mr. Schneider writes:

"Have been feeding Vitality Dog Food for the past seven years and find it keeps my dogs in top condition. Breeding Bulldogs, Weimaraner, Chihuahua and Belgian Sheepdogs—large or small breeds, they all thrive on Vitality."
(Letter on file.)

FEED VITALITY KIBBLED BISCUITS MOISTENED (NOT SOAKED) OR DRY. NEVER STICKY OR GUMMY . . . WON'T MUSH UP.

- A VITALITY DOG FOOD FOR EVERY NEED
- SUPER-IRONIZED AT NO EXTRA COST

VITALITY MILLS, INC.

J. D. Sykes

J. D. Sykes to Head 4-H Builders' Council

SILVER SPRINGS, MD. — J. D. Sykes, vice president in charge of public relations for the Ralston Purina Co., St. Louis, has accepted the chairmanship of the National 4-H Club Foundation's 4-H Builders' Council, according to an announcement from the Foundation's office here.

The 4-H Builders' Council is a citizen group comprised of leaders in the business community, who seek to develop continuing support for the work of the National 4-H Club Foundation. Mr. Sykes has served on the council since 1953, representing the feed manufacturers.

The National 4-H Club Foundation is an educational, non-profit organization, which operates as an arm of the cooperative extension service in carrying out certain activities of a spearheading-nature on behalf of 4-H club work. The foundation has as its current activities: (1) development and operation of a National 4-H Club Center, (2) the International Farm Youth Exchange program, (3) a citizenship improvement study, and (4) human relations training for youth leaders.

Mr. Sykes has long been close to 4-H club work and the extension service. As a boy in North Carolina, he belonged to one of the first Corn Clubs, organized in 1909, later to develop into the 4-H club. He was a member from 1914-16.

He graduated from North Carolina State College with a degree in agriculture. Following graduation, he became an extension poultryman in Alabama, 1924-25. He then operated his own poultry breeding farm, hatchery and feed dealership from 1925-28. In 1928 he returned to the extension service as extension poultryman at Mississippi State College, a position he held until 1935. In that year he became poultry coordinator, U.S. Department of Agriculture, where he stayed until 1941 when he joined Ralston Purina Co.

In 1955 Mr. Sykes was presented the 4-H Alumni Recognition Award plaque for the state of Missouri. This award recognized Mr. Sykes for his "outstanding record of leadership and participation in civic, community and public activities" during his years of business leadership.

College Scholarship Established by Nopco

HARRISON, N.J. — A four-year college scholarship, to be called the Charles P. Gulick Scholarship after the late founder of the Nopco Chemical Co., has been established by the board of directors of Nopco.

The scholarship, having a value of $750 a year for four years, will be awarded annually to the son or daughter of a Nopco employee.

Candidates will be judged by the Nopco scholarship committee on the basis of scholastic achievement, financial need, character and well-rounded personality. The committee consists of Prof. Charles O. Beckman, Columbia University, Dr. Evald B. Lawson, Upsala College, and George Kramer, Rutgers University.

The Nopco Chemical Co. is a leading producer of industrial processing chemicals as well as vitamin products for the dairy, feed and pharmaceutical industries.

NEW MANAGER NAMED

VANDALIA, MO. — Hubert Gibson has been named the new manager of the Vandalia Farmers Elevator & Supply. He replaces Bill Baird. Mr. Gibson recently sold his farm near here.

UNIVERSAL CARDBOARD CHICK FEEDERS

No. 1 Pat. No. 2 Pat.

No. 1 and No. 2 for Baby Chicks—500—$30.00, 1000—$55.00. Also No. 3, same type as No. 1 and No. 4, same type as No. 2, both for Growing Chicks and Poults—500—$49.00, 1000—$90.00. Order now for immediate or future delivery.

GENERAL DISTRIBUTING CO., INC., NEWTON, KANSAS

Faster grinding—more accurate mixing . . .

CHAMPION

MILL AND MIXER UNITS

CHAMPIONS will outperform any other grinding and mixing units regardless of the type or amount of ingredients it grinds and mixes. It easily handles the toughest of mixes—wet or dry materials. Warm, sweet, liquid molasses is quickly and evenly blended into fresh feeds as they are being ground.

The materials are mixed, blended and cross-blended, away from the ends and towards the center—with constant UNIFORMITY AND ACCURACY. This accurate blending and mixing action assures complete formula uniformity in every batch mixed—batch after batch.

You can depend on CHAMPION performance to increase your business. With its big, 110-cu. ft. capacity, and its superior, faster grinding action, you'll spend less time on each job and process more feed in a day. These powerful, ALL-HYDRAULIC mobile units will build up your concentrate tonnage, and expand your business through additional on-the-farm sales.

Let us help you make a survey of the area in which you want to extend your business. Write today for full information.

You can pay more money, but you can't buy better feed grinding and mixing equipment

CHAMPION PORTABLE MILL CO.

2109 COMO AVENUE SOUTHEAST - MINNEAPOLIS 14, MINNESOTA

DOG and CAT FOOD Studies

Palatability
Nutritive Value
Protein Quality
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LABORATORY of VITAMIN TECHNOLOGY
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SPECIALTY INGREDIENT SALES
National or Regional Distribution
48 Salesmen in U. S. and Canada calling on feed manufacturers. Here's your opportunity to get national coverage over-night. Presently handling one ingredient. Tops in our field.
Write No. 1364, Feedstuffs, P. O. Box 67 Minneapolis 1, Minn.

Pennsylvania Meetings To Feature Talk on Wage and Hour Law

EPHRATA, PA. — The Wage and Hour Law in the feed industry will be the subject discussed at the forthcoming annual Pennsylvania Millers & Feed Dealers Assn. series of spring regional meetings.

Daniel V. Foster, Jr., inspector for Wage and Hour Division, U.S. Department of Labor, will be the principal speaker.

In the February issue of the association's publication, Grist from the Mill, Richard I. Ammon, executive secretary of the association, said that application of the Fair Labor Standards Act to the flour and feed industry is one of the most "tricky and confusing aspects" of the entire law. He said most feed dealers do not understand it and even many district offices of the Wage and Hour Division are unable to provide satisfactory explanations.

The fact that most feed dealers pay on the basis of a weekly salary rather than on an hourly rate was said by Mr. Ammon to complicate the matter further. Also, he said, most dealers work an average of 50 hours a week, bringing up the question of time and one half for hours worked over 40.

Several recent cases were reported of feed dealers in Pennsylvania being forced to pay large amounts in back wages because of improper record-keeping or misunderstanding of the law.

In addition to the discussion on the Wage and Hour Law, those attending the meetings will be treated to a "sneak preview" of one of four employees' training kits that will be offered to association members as a new association service. The kits include sound-slide films illustrating how feed dealers can train their employees in handling customers, telephoning and other personnel relations aspects.

Each series meeting will take the form of a model employee training meeting. The "sneak preview" sound-slide film to be presented is titled "Bill Barrett's Nightmare."

Site and date for each meeting are Hostetter's Restaurant, Mount Joy, April 3; Moose Home, Quakertown, April 4; Penn-Hunt Hotel, Huntingdon, April 10; Sweeney's, West Newton, April 11; Schuster's Restaurant, Greenville, April 12; Hotel Prince, Tunkhannock, April 18, and Hotel Edison, Sunbury, April 19.

The program for the spring regional meetings was arranged by the association's regional meeting committee of which Robert E. Francis, C. Y. Wagner & Co., Inc., Bellefonte, Pa., association president, is chairman.

Soybean Blue Book For 1956 Published

HUDSON, IOWA—The tenth anniversary of the Soybean Blue Book, soybean industry year book, published by the American Soybean Assn., is now out, George M. Strayer, executive vice president of the association has announced. The 1956 edition of the book comprises 160 pages and cover

Assembled for quick reference are the latest available statistics on production, prices and utilization of soybeans, meal and oil, according to Mr. Strayer. There are directories of soybean processors, oil refiners, and manufacturers using soy products in their operations, as well as firms offering their services and products to the soybean industry.

Included this year is full information about the revised federal grading standards and steps in soybean grading.

The book is available at $3 per copy from the American Soybean Assn., Hudson, Iowa.

California Pilchard Catch Up 12%

WASHINGTON—Unofficial figures reported by the National Fisheries Institute, Inc., show that the California pilchard fishery for this season, which closed Feb. 1, will have an increase of approximately 12% over the 67,000 tons landed a year earlier.

This report points out that both catches could have been increased considerably had it not been for prolonged wage and price disputes and uncertainties as to markets for the canned product.

Fish meal production was up approximately 8½% to a little more than 7,000 tons, while oil production was up to 880,000 gal., an increase of 18%.

Step-Up Grit SALES with Our New KING SIZE FEEDERS

Weighs Approx. 22 lb.

Your Grit sales go up when you Display-Feature-and-Sell the New King Size, Easy to Stack, Self Feeding GRAN-I-GRIT Feeder Pack. It SAVES Poultry Raisers, Dealers and Jobbers both Time and Labor handling heavy Bags and releases valuable storage space.

GRAN-I-GRIT HAS EYE APPEAL

Tests by leading poultry authorities have proven that layers prefer a grey grit with dark specks . . . the GRAN-I-GRIT TYPE . . . as much as 10, 15 and even 100 to one over grit of other colors.

GRAN-I-GRIT

THE GRIT WITH THE SHARPEST GRINDING EDGES EVER CUT

Nationally Advertised

GRINDS FEED FINER

GRAN-I-GRIT, with its sharper grinding edges, grinds feed finer in the gizzard. Finer grinding of feed releases more nutrients from the grains and grasses that birds consume.

BETTER USE OF FEED

Because GRAN-I-GRIT releases extra nutrients from feed, birds get more body-building nourishment. Pullets develop bigger, stronger and faster with less feed and when in production they produce the same number of eggs with LESS FEED AND WITH LESS COST.

These extra nutrients also help speed the growth and feed conversion of broilers. Faster growth and quicker marketing of broilers mean better profits.

USED BY LEADING POULTRY BREEDERS

Leading poultry breeders and Top commercial egg producers, use and recommend GRAN-I-GRIT. They know from experience how GRAN-I-GRIT helps improve livability of chicks, growing stock and layers, and how GRAN-I-GRIT's New King Size Feeder Pack is unbeatable where birds are separated into breeding pens.

GET THE FACTS

Take time out now and write for our new GRAN-I-GRIT Free Booklet that tells how GRAN-I-GRIT Saves and Makes Poultry Raisers More Money and How GRAN-I-GRIT will Step Up your Grit Sales. Also gives full details on retail and jobber opportunities.

NORTH CAROLINA GRANITE CORPORATION MOUNT AIRY, NORTH CAROLINA

You're Money Ahead

with PARKERSBURG

PREFABRICATED GRAIN STORAGE BUILDINGS

• Money ahead on quick erection • safe storage • low maintenance • long life.

• WRITE TODAY FOR NAME OF YOUR NEAREST PARKERSBURG DEALER

Parkersburg RIG AND REEL COMPANY

DIVISION OF PARKERSBURG : AETNA CORPORATION
3345 WINTHROP AVENUE FORT WORTH 16, TEXAS

these smart dealers tell you why...

IT PAYS TO BE A DANNEN DEALER!

"RESALE"

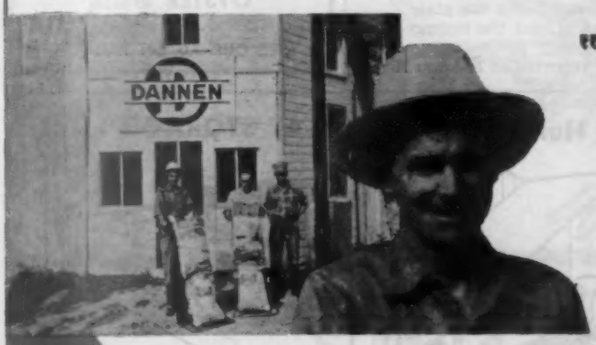
VERNE WITMER, Berwick, Kansas

"Believe me, I'm really sold on the way the Dannen folks do things! Every time the Dannen territory man and I get together and go call on my customers, I notice a steady increase in my business. My customers have commented over and over again how much they appreciate hearing about Dannen Feeds first hand."

"FEEDER MEETINGS"

BRUCE JOHNSTON, Inavale, Nebraska

"Anyone in business realizes how important it is to have the full support of his supplier. Dannen Mills is more than doing its share to help me sell. One of the first things that comes to mind is the Dannen Feeder Meetings. Everybody always has a good time at those meetings and I can't begin to tell you what the results have meant to me in the way of customers!"



"FARM TOURS"

GLEN SPARKS, Princeton, Missouri

"You know, Dannen Mills not only helps me get new customers, but also helps me keep the ones I already have! Why, when I take some of the folks on one of those trips to the Dannen Research Farm, they come back more impressed than ever. It's good 'selling sense' and plenty good for my business!"

DANNEN

HERE'S HOW DANNEN HELPS YOU SELL:

- Concentrated Farm Resale
- Feeder Meetings
- Local Newspaper Advertising
- Live Displays
- Sales Training School for Dannen Dealers and their Employees
- 247-Acre Research Farm
- Dealer Meetings
- Premium Promotions
- Product Control Department
- Extensive Newspaper and Farm Paper Advertising
- Feeder Finance Programs
- Effective Point-of-Sale Material
- Strong Radio and TV Coverage
- Outdoor Signs
- Special Promotion for New Dealers

DEALERSHIPS AVAILABLE Write today for complete information.

DANNEN MILLS, INC.

ST. JOSEPH, MISSOURI

HOMER

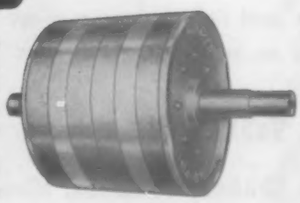
PERMANENT MAGNETIC EQUIPMENT

ASSURES PRODUCT QUALITY AND PURITY... HIGHER PROFITS...GREATER SAFETY

HOMER PERMANENT MAGNETIC PLATES

For use in processing and handling of grains, seeds, feeds and chemicals . . . to automatically and economically remove tramp iron. For use with chutes, belts and all other types of conveyors, Homer Permanent Magnetic Plates protect product quality . . . protect processing machinery . . . and prevent fires and explosions as a result of tramp iron contamination. Write today for Bulletin PL-250.

HOMER *HERCULES* AND *HERCULES SUPREME* PERMANENT MAGNETIC PULLEYS



Automatically remove tramp iron from belt conveyed materials in the handling and processing of grains, seeds, feeds and chemicals. Homer Permanent Magnetic Pulleys protect crushers, grinders, pulverizers and other process equipment. Non-electric and trouble-free—no loss of magnetic protection as result of power failures. Homer's "Radial Pole Design" assures highest magnetic strength across entire working face of pulley for deep, effective penetration and removal of damaging tramp iron. Write for Bulletin PY-260.

HOMER PERMANENT MAGNETIC DRUMS

For installation at discharge end of gravity, belt or screw conveying systems. Automatically remove tramp iron from feeds, seeds, grains and chemicals. Permanent and non-electric and trouble-free—Homer Magnetic Drums require no outside power source. As the burden passes over the drum, the powerful magnetic attraction of Homer's "Radial Pole Design" grabs tramp iron and holds it against the drum while the non-magnetic material falls free. The tramp iron is discharged from the drum as the drum revolves out of the magnetic field. Complete details in Bulletin MD-200. Write for it today.

FREE LABORATORY ANALYSIS

The Homer Manufacturing Co., Inc., will analyze your processing operation to determine the most effective method for supplying complete magnetic protection against tramp iron for your product and machinery. No obligation for consulting service.

The Finest in Permanent Magnetic Equipment . . . for the Grain Industry

THE HOMER MANUFACTURING CO., INC.
DEPT. 165 • LIMA, OHIO

ATTEND SALES CLINIC—Peter Hand Foundation in Chicago recently held its annual District Managers' Sales & Service Clinic. The managers' group spent two days in the Chicago office and laboratory and one day at the company's 500-acre experimental farm near Madison, Wis. According to Wiley Akins, vice president and general manager, the company has just completed the best year in its history. The capacity of its mixing plant is being doubled. In the picture, standing from left to right, are Dr. H. S. Wilgus, vice president and director of research; John Linsner, Richard Kerley, Bob Vaughan, Earl Sallee, Ben Lanning, Wright Cochran and John Shaw. Seated, from left to right, are Charles Bowman, Mr. Akins and Dr. Joseph Blight.

South Carolina Feed Tonnage Reported

COLUMBIA, S.C.—South Carolina's commercial feed tonnage in the fiscal year 1954-55 was 366,024 tons, according to a recent report from the State Department of Agriculture.

The report covered feed made in South Carolina or brought into the state. Revenue from the 25¢ per ton tax was $91,506 for the year.

An analysis of the feed tonnage showed that poultry feed accounted for 55.87% of the total milled in the state or brought into the state.

The types of feed, the tonnages and the approximate percentages of the total were reported as follows: Horse and mule feed, 5,893 tons, 1.61%; dairy feed, 51,243 tons, 14%; hog feed, 38,396 tons, 10.49%; poultry feed, 204,498 tons, 55.87%; cottonseed meal, 26,573 tons, 7.26%; peanut and soybean meal, 732 tons, .20%; dog foods, 12,042 tons, 3.29%; wheat, oats and corn by-products, 10,981 tons, 3%; other feeds, 15,666 tons, 4.28%.

"Snow-Flake"
OYSTER SHELL
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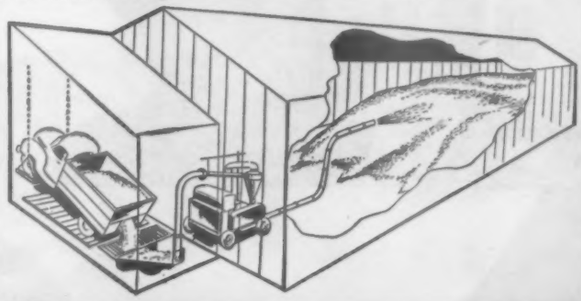
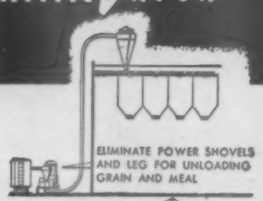
SEE OUR AD ON PAGE 74

For Handling Grain in FLAT STORAGE . . .



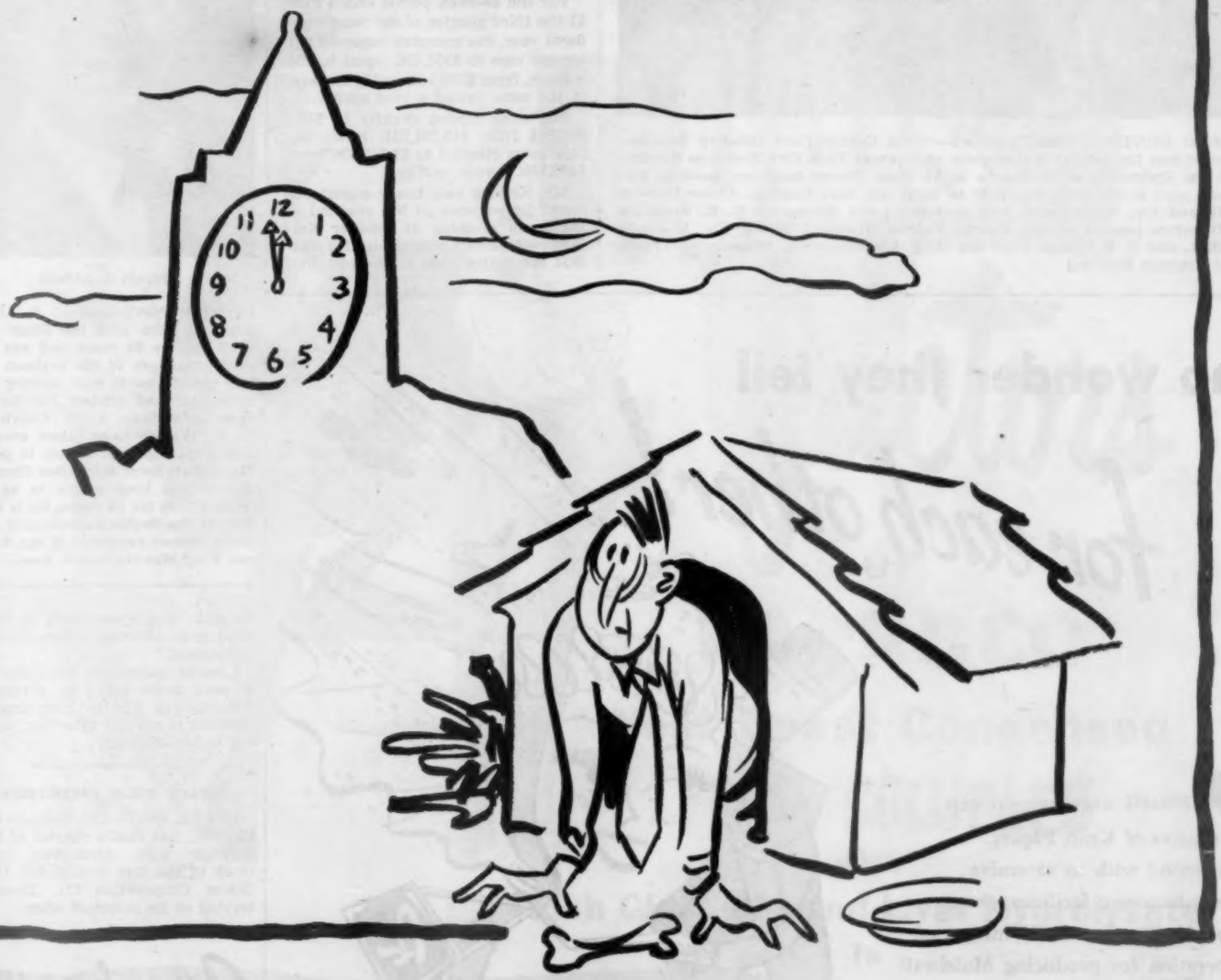
YOU NEED A **FORDS**
PNEUMATIC GRAIN*VAYOR*



Completely redesigned, the new FORDS portable GRAINVAYORS are designed to solve any unusual loading and unloading or salvage operation. 3 models that handle granular, flaky and powdered material as well as grain. New compounding multi-stage air turbine permits larger material volume to be conveyed up to 300 ft. with smaller air volume and minimum horsepower. Portable or stationary models provide low cost pneumatic handling of grain and fine materials at a fraction of the cost of other permanent facilities.

NATIONWIDE SALES AND SERVICE
Write for Literature and Name of Nearest Distributor
MS MYERS-SHERMAN COMPANY
1601 S. ILLINOIS STREET • STREATOR, ILLINOIS

IF YOU'RE IN THE DOG HOUSE WITH YOUR FEED CUSTOMERS...



It's Time To Change To Staley's FEEDS

It's not his fault he's in the doghouse. Poor-performing feeds are to blame. It's hard to understand, too. When he first took on his present line of feeds a few years back, his customers were quite pleased with the results, and he built up a good business.

But somewhere along the way—something happened. No longer were his customers getting good results. What seemed like simple complaints at first, turned into lost sales, as one by one his best customers drifted away.

The reason? The feeds he sold failed to keep up with the latest nutritional advancements. Advancements like Staley's new STA-FAT Chick Starter that produces 16% more gain on 14% less feed in 2 weeks less time; or Staley's Baby Pig Formula that's 4½ times more nutritious than sow's milk.

So if you've been receiving more complaints than usual because your customers are not getting the results they expect, do this: CHANGE TO STALEY'S *FAST* . . . *before* you too, wind up in a financial doghouse. For all the money-making details about our new plans for '56:

HITS THE MARK®

WRITE, WIRE OR PHONE
C. W. Thompson, Mgr., Formula Feeds

A. E. STALEY MFG. CO.,
DECATUR, ILLINOIS

FEED CONTROL DISCUSSIONS—"Feed Control-Feed Industry Relationships" was the subject of discussion at a recent Twin City Nutrition Seminar at the University of Minnesota in St. Paul. Shown here are speakers who took part in the program. Left to right are Earl Hanson, Archer-Daniels-Midland Co., Minneapolis, who moderated the discussion; R. E. Bergman, Minnesota control official; George Patrias, Hubbard Milling Co., Mankato, Minn., and N. E. Foster, Food and Drug Administration, Minneapolis. (Photo by Truman Fowler.)

Spencer Kellogg Net Income Up for Quarter

BUFFALO—Howard Kellogg, Jr., president of Spencer Kellogg & Sons, Inc., has forecast continued improvement in the company's earnings for the next quarter as compared with a year ago.

For the 14-week period ended Feb. 11 the third quarter of the company's fiscal year, the company reported net income rose to $554,496, equal to 45¢ a share, from $221,140, or 18¢ a share, in the same period a year earlier.

Net sales dipped slightly to $43,458,044 from $43,591,051. Profit before taxes climbed to $1,143,496 from $449,140 a year earlier.

Mr. Kellogg said heavy export demand for soybean oil has resulted in maximum crushing at Spencer Kellogg mills. Profit margins in this division are better than a year ago, but, he said "still leave much to be desired in considering return on capital investment."

Linseed operations have also been at peak levels partly as a result of toll crushing for the government in addition to normal activities, according to Mr. Kellogg.

Harold A. Abbott

IN NEW POST—Harold A. Abbott, who has been with the Funk Bros. Seed Co. for 20 years and has been active manager of the soybean milling operations, is now serving as a consultant and adviser for the soybean operations. A. M. Convis and D. D. Walker have taken over the active management duties to permit Mr. Abbott more relaxation time. Mr. Abbott has been active in agricultural affairs for 59 years. He is treasurer of the Soybean Processors Assn. and a former president of the American Feed Manufacturers Assn.

GRAIN FIRM CHARTERED

DOVER, DEL.—C. J. Simpson Grain Co., Inc., has filed a charter of incorporation here. Authorized capital stock of the firm is $100,000. United States Corporation Co., Dover, is serving as the principal office.

no wonder they fell

for each other!

ALBEMARLE with its own vast resources of Kraft Papers, Raymond with its extensive manufacturing facilities, are now "wedded" as a wholly integrated operation for producing Multiwall Paper Shipping Sacks to meet your most exacting needs.

Any required number of plies, clean colorful printing and the finest Multiwall Kraft Papers, including such specialties as asphalt laminated kraft, colored kraft, creped kraft, waxed kraft and wet-strength kraft—all direct from the Albemarle Mills.

With the assurance of prompt deliveries always!

RAYMOND BAG CORPORATION
Division of Albemarle Paper Mfg. Co.
Middletown, Ohio • Richmond, Va.

Raymond

MULTIWALL PAPER SHIPPING SACKS

Fleischmann's F·I·D·Y
IRRADIATED DRY YEAST
RICH IN VITAMIN D FOR FOUR-FOOTED ANIMALS

McCabe Grain Company Limited
WINNIPEG, CANADA
LONDON, ENGLAND VANCOUVER

McCABE GRAIN
LONDON OFFICES
Schwarz & Co. (Grain) Ltd.
Victoria Products and Grain
(Overseas Agents) Ltd.

SILMO
for Vitamin Oils.... for Dry Vitamin Supplements

The farmer's daughter knows that one of the...

plus factors

OF PAPROCO

West Coast Condensed FISH SOLUBLES

with

Fish Glandular and Liver Hydrolysate

is

Amino Acids from Fish Protein

A CONVENIENT PRE-MIX

Sea-Maid '40'

Contains PAPROCO Condensed Fish Solubles, fish glandular and liver hydrolysate, solvent extracted soybean oil meal and phosphate mineral, manufactured by a patented process which requires no heat and preserves all the nutritive qualities of these ingredients. Sea Maid "40" is convenient and easy to use, requiring no special mixing equipment. Packed in 100 lb. multiwall paper bags, Sea Maid "40" is easily added to any formula.

Levels of essential amino acids play an important part in the fast gains and increased growth demanded by today's competitive livestock and poultry markets. Feeds enriched with PAPROCO West Coast Condensed Fish Solubles (with fish glandular and liver hydrolysate added) contain the added nutritional "punch" of free amino acids from fish protein which help in fast, economical production. Your customers get a competitive edge and you enjoy increased profits. When you specify PAPROCO in your feed formulas, you get these *plus* factors:

- Unidentified Growth Factor(s)
- B-12 and all known B-Complex Vitamins
- Amino Acids from Fish Protein
- Essential Trace Minerals
- Breeding "Carry Over" Factor
- Manufactured by Lassen Process
- Double Screened to remove Excess Solids
- Assured Year 'Round Supply

Complete analysis of amino acids, vitamins and mineral content available on request

Write for descriptive booklet!

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What's New in Feeding

Putting Feed Research to Work

"Sweets" for Pigs—I

Following is a review of a paper, dealing with the general subject of "sweets" for pigs, which appeared in the Journal of Animal Science, Vol. 14, No. 4. This paper covers Illinois research with saccharin and cane molasses. Next week, this department of Feedstuffs will review a report from Iowa on the influence of cane sugar and form of pig starter.

SACCHARIN AND CANE MOLASSES

The objective of a study reported by R. A. Notgold, D. E. Becker, S. W. Terrill and A. H. Jensen of the Illinois Agricultural Experiment Station was to determine the value of saccharin and dried cane molasses as additives to rations for pigs.

Four separate experiments were conducted. In Experiment 1, 30 weanling pigs, consisting of Yorkshire and Yorkshire-Hampshire crosses (initial weights about 39 lb.) were divided systematically into five lots of six pigs each. These pigs were self-fed ad libitum for a period of eight weeks. There were two basal rations fed in Experiment 1. They were identified as Rations A and B. The difference in formulas between these rations was that 7.2% of a dried molasses product was used in Ration B to replace 0.2% of the soya and 7% of the corn contained in Ration A. The dried molasses was a commercial product made by drying cane molasses on soybean oil meal with the dried mixture containing some 35% of molasses. Lot 1 received Ration A unsupplemented, whereas, Lot 2 received Ration A plus 0.03% saccharin. Lot 3 was fed Ration A plus 0.10% saccharin. Ration B, containing the dried molasses product, was fed to Lot 4, and Lot 5 received Ration B plus 0.03% saccharin.

In each of the Experiments 2 and 3, there were four lots with six Hampshire pigs per lot. The pigs in Experiment 2 averaged about 90 lb. at the beginning of this study while the initial weight of the pigs in Experiment 3 was about 45 lb. The feeds were self fed ad libitum for a period of four weeks in Experiment 2 and for eight weeks in Experiment 3. In both of these experiments (2 and 3), a supplement was fed which consisted of 23% meat scrap (55% protein), 24.1% soybean oil meal, 22.5% alfalfa meal, 23% dried corn distillers solubles, 4% steamed bone meal, 2% trace mineralized salt, 1.1% antibiotic-vitamin B_{12} supplement and 0.3% of a vitamin supplement. In Experiment 2, ground corn and shelled corn were fed with and without the addition of 0.1% Saccharin (Sodium, soluble, U.S.P. powder). Only shelled corn was used as the grain portion of the ration fed in Experiment 3, where saccharin was tested at levels of 0.05% and 0.10%. The saccharin was mixed with the ground corn in a feed mixer; whereas with shelled corn, it was added as a solution and mixed manually.

Experiment 4 comprised six pairs of Hampshire pigs divided at random into two groups. The initial average weight of the pigs in group 1 was 54 lb., and it was 53 lb. for the pigs in group 2. Each group was given access ad libitum to shelled corn, shelled corn plus 0.05% saccharin and the same supplement as fed in Experiments 1 and 2. Each feed was kept in a separate feeder, and the feeders were switched daily in order to equalize the effect of its location. Pig weights and feed consumption were recorded at bi-weekly intervals throughout the feeding period of about eight weeks.

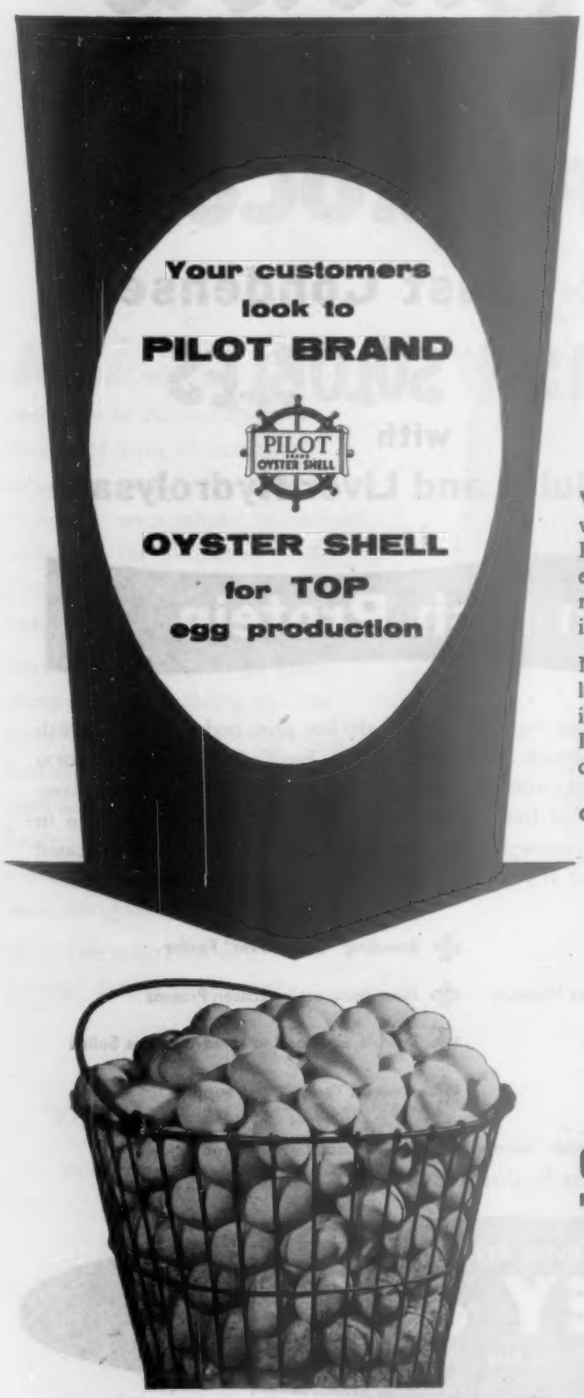
Results

The addition of saccharin at 0.03 or 0.10% or of 7.2% of the dried molasses product (containing about 35% of cane molasses) to the ration fed the weanling pigs in Experiment 1 failed to exert a significant effect on feed consumption, rate of gain, or feed efficiency. The 0.1% of saccharin added to the ground or shelled corn and self-fed, free choice with the supplement in Experiments 2 and 3, also failed to affect rate of efficiency of gain. In Experiment 4, which was the palatability test, the pigs consumed, for the total period of about eight weeks, greater quantities of the shelled corn treated with 0.05% saccharin than of the untreated shelled corn. However, a distinct preference for the saccharin-treated corn was shown only during the first 27 days. Actually, during the first 13 days, 64.2 and 63.4% of the total corn consumed was the saccharin treated corn in group 1 and 2, respectively, whereas during the last 14 days, approximately equal quantities of the treated and non-treated corn were selected.

These Illinois investigators conclude from the experiments described above that as sweetening agents, dried cane molasses and saccharin apparently have no value in pig feeds for improving feed consumption or rate of gain of growing-fattening pigs. They do say, however, that cane molasses may be used as a source of energy and for such, the dried product, similar to the one which they used, may be fed at a rate of 7.2% of the ration without deleterious effects.

Since this dried product contained about 35% of cane molasses this means an endorsement for only about 2.5% of cane molasses as such in the complete ration of growing-fattening pigs. This level of 2.5% of cane molasses is quite conservative in view of considerable experimental evidence indicating that the "safe" and effective levels of molasses in swine rations, properly fortified, especially with respect to protein and B-complex vitamins, are somewhat as follows: (1) 5 and possibly up to 10% of the ration for weanling pigs; (2) 10 with maximum at 20% of the ration for pigs weighing from 75 to 100 lb.; (3) approximately 20% of the ration for pigs weighing 100 lb. or more, and (4) up to some 50% for brood sows and boars.

When fed as specified, molasses has had a feeding value ranging from 75% to 111% that of cereal grains. The average grain replacement value of molasses for swine appears to be something like 85%.



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TRENDS IN MEDICATED FEEDS

By Dr. H. Ernest Bechtel

***EDITOR'S NOTE:** Progress and problems in the use and control of medicated feeds have been attracting a great deal of attention recently, and trends in medicated feeds were the subject of one of the talks at the recent Midwest Feed Manufacturers Assn. convention in Kansas City. The speaker was Dr. H. Ernest Bechtel, director of the Larro Research Farm, General Mills, Inc., Indianola, Iowa. The accompanying article is an excerpt from the text of Dr. Bechtel's remarks and deals with present and future trends in connection with medicated feeds.*

Medicines are being used increasingly in manufactured feeds for all types and classes of livestock and poultry. Well over 40% of 1955's output of 33.6 million tons of manufactured feeds probably contained medicine in some form or other.

The production of medicated feeds is a complicated business of putting drugs and nutrients together legally and effectively. And it also is a rapidly changing business.

This is evident from a review of some of the more significant developments occurring in medicated feeds. For instance, there are trends toward:

1. **More medicants** — There was general agreement at the recent Medicated Feeds Symposium in Washington, D.C., that the large number of present feed medicants only presages what lies ahead. The drug suppliers' research teams are playing some of the stellar roles, and the modern feed manufacturer long since has learned to develop comparable skills in his end of the business and to maintain as flexible a position as possible in order to capitalize fully on each new development as it comes along.

2. **Improved statutory control**—Regulatory officials, at the state and federal levels, have buoyed the outlook of the medicated feed manufacturer through the expressed hope that a better understanding can be had between feed manufacturers and control officials. Moreover, there are definite indications that substantially more financial support soon may be given for this regulatory work.

These developments should pave the way for prompter review and action on medicated feed application and for more careful review of industry problems involving policy decisions and interpretations—such as the disclaimed similarity or comparability between human drug labeling and feed labeling, and the continuing insistence that the manufacturer of medicated feeds be arbitrarily placed in the anomalous position of playing down trade or brand names in deference to first listing the technical chemical name of the drug in the branded product.

3. **Wider acceptance by veterinarians** — Qualified animal disease specialists and practitioners are cooperating increasingly in the use of medicated feeds as important adjuncts in combating livestock and poultry diseases under farm and ranch stress conditions.

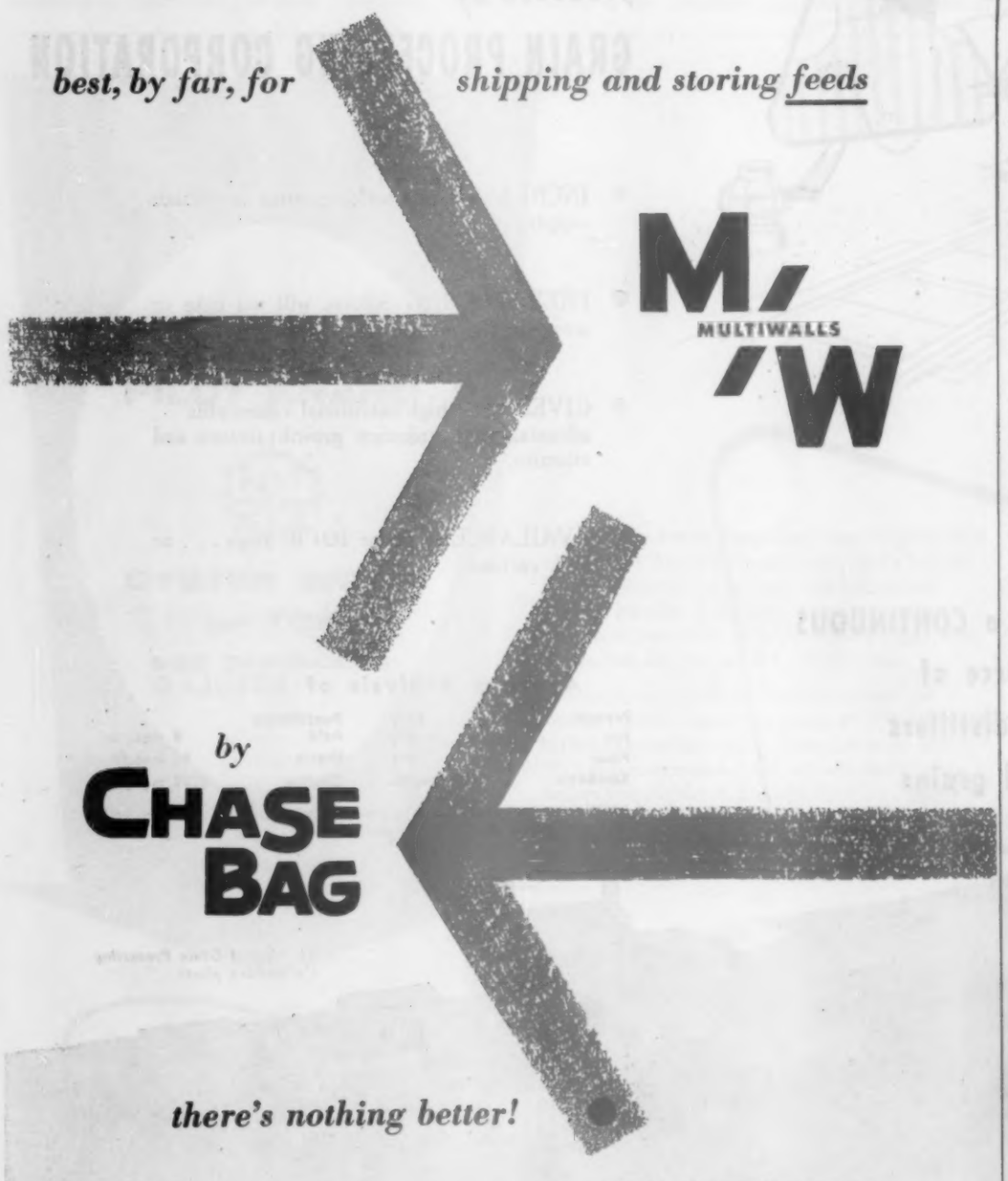
4. **De-emphasis of "miracle" aspects of medicated feeds**—Today, more than at any time since feed medicants came into the picture, all concerned have a sounder perspective in terms of what medicated feeds can and cannot do. Feed manufacturers, salesmen, feed dealers, farmers, and others now more generally recognize that drugs can neither substitute for, nor be replaced by, good breeding, good nutrition, good management, and all the other factors that go to make for a successful husbandman.

At the same time, medicated feeds have become more clearly recognized for what they are—namely, combinations of nutrients and drugs capable of nourishing the animal while at the same time combating specific and/or non-specific stress factors.

5. **More research**—There is a clear trend to more research in the field of drugs and medicated feeds. Demands for increased research budgets are being made and met, on the part of the drug suppliers and those using their products. Likewise the quality of research in this and related fields is being improved continually.

6. **Increased "grass roots" selling**—Drug suppliers are tending more and more, in at least a number of instances, toward carrying their promotional campaigns right out to the farmer. This is selling at the "grass roots" level, and has resulted in farmers exerting strong pressures on feed manufacturers to incorporate certain drugs in preference to others in their feeds. Such practices have mixed consequences.

They hasten the adoption of practices—both good and otherwise—and probably lead to building up much false hope in cases where sales splurges succumb to a superior competitive product able to withstand the hard tests of farm use and reuse. Fortunately, facts will rule in the end, and those medicants which really



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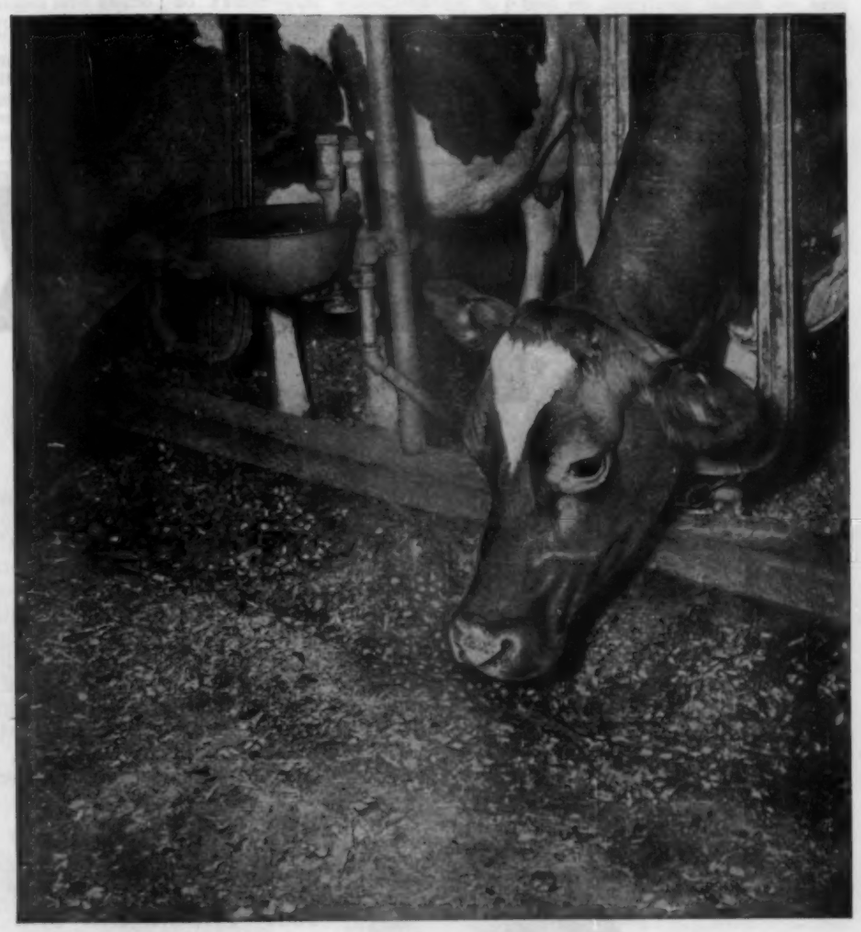

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have "what it takes" will find their level in manufactured feeds irrespective of whether they are fostered through ethical channels or otherwise.

7. Requiring more complete information before adopting new drugs—It is not as easy today to place a new drug "on stream" in a medicated feed. There are many reasons for this, and the trend is growing. This is true especially of those feed manufacturers who are quality and cost conscious, and who are in position to conduct their own independent applied research on the problem. The seasoned feed manufacturer is less disposed than ever to accept superficial, incomplete evidence on drug efficiency, on quality control measures, on disease spectrums, on feed efficiency factors, or on any other pertinent points.

Failure to submit satisfactory evidence on any important phase of the problem is being regarded by the feed manufacturer, more than ever before, as good reason to delay the use of any new drug in medicated feed. Consequently, feed manufacturers understandably are becoming more appreciative of facts unclouded by rumors, of advance information on the strong and weak points of each new product, and of information showing how the product compares in a practical way with other products of a similar or related kind. The entire industry is benefiting from this forthright approach to the problem of medicated feeds and their use in the best interests of supplier and customer alike.

8. Greater flexibility in the feed plant—Medicants have increased the complexity of modern feed manufacturing almost beyond the belief of many working in this field in recent years. The facilities and know how of an apothecary shop must be teamed with the usual heavy equipment in a way that will insure uniform distribution of all constituents in the feed mixture, without unnecessary expenditures for equipment which might later be unadapted to some new twist in mill operations.

The addition of a new drug often means not just one new medicated feed but a potentially greater number by the time provisions are made for mash, crumbles or pellets and for several styles of packages and for other variables that apply to any one feed. Of necessity, this is leading to greater flexibility in feed plant facilities and in planning programs for the future.

9. Lower-cost drugs — Manufactured feeds, though far more complicated than ever, have materials costs in many cases no more than those of their earlier counterparts made from much simpler formulations. This has been made possible by the ingenuity and efficiency of the drug houses, chemical firms and others who supply the medicants and other micro-ingredients for use in modern feeds.

Time after time, ways have been found to make these additives available at lower cost even while the quality has been improved on the basis of new know-how. These trends have been in evidence for several years and can be expected to continue.

10. Improved feeds—The ultimate objective of medication, as well as any other change in feed formulation, is more efficient feeds and more income-over-feed cost or equivalent. This is being accomplished step by step, and certain exceptional results coming out of the laboratories today show that still better feeds are in prospect.

Medicated Feeds of the Future

Today, "science comes to the farmer in a feed bag" as it has never done before. Mass prevention and mass treatment of stress conditions could be as well accomplished in no other way than via the feed bag. Successful husbandry demands combating ailments, poorly defined or otherwise, with the best possible weapons. That means feed medication, among other things.

Medicated feeds are here to stay, unless displaced by some as yet unforeseeable and entirely new concept of solving the problem of stress conditions. Yet, there are many things to be desired. Too many diseases are as yet poorly defined. Specific medicants are lacking for certain ailments. Where medicants are effective in varying degree, the mode of action often is largely a mystery — thus pointing up the need for more basic research.

Likewise, in at least a few instances, remedial agents exist, but their current costs are such as to curb their use under many practical farm conditions. Economic considerations also are limiting the heavier use of certain other feed medicants capable of improving animal performance under farm conditions.

No one can predict the future in this field, beyond the reasonable assumption that the present trends will lead to many more new medicated feeds during the course of the next few years. The basic research load will probably continue to be carried by the drug suppliers. However, the integration of any new products into the feed manufacturing picture will best be accomplished by the drug suppliers alerting and working with feed producers, many months in advance of intended commercial use. In this manner, delays typical of the past can be avoided and a more rounded set of advance facts developed on any new program to answer practical manufacturing and field questions long before questions actually arise in the minds of farmer customers or others.

Improved team work of this kind between drug supplier and feed manufacturer, can do more than most anything else in the immediate future to insure sound medication programs and to expand confidence in medicated feeds in all segments of the industry —including drug suppliers, feed control officials, feed nutritionists, quality control chemists, mill operations personnel, feed dealers, salesmen and farmers. Fortunately, this approach already is in evidence. One of the results is an improving backlog of information on feed medicants. Thus, the ground work is being laid for even more effective use of drugs in feeds in the future.

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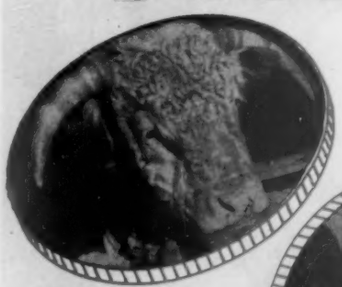

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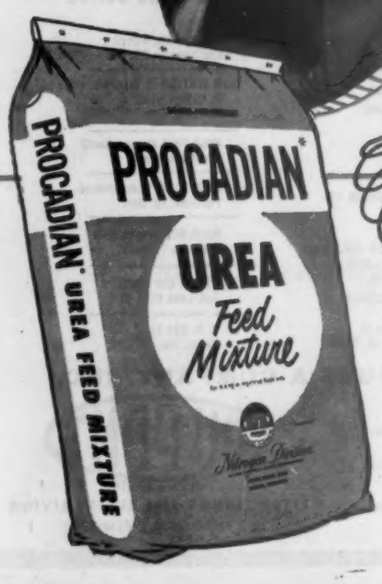

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STATE COLLEGE, N.M. — Stilbestrol feeding trials here at New Mexico A&M College showed an average of 30% weight gain, 12.7% increase in feed efficiency, and 7.5% decrease in cost of feeding.

These results were revealed by Ward Repp, assistant nutritionist, at the recent 17th annual Feeders Day program sponsored by New Mexico A&M. He said stilbestrol feeding trials at USDA and several state experiment stations had resulted in increased gains ranging from 10 to 36%, increased feed efficiency from 0 to 22%, and decreased costs of feeding from 0 to 19%.

Clyde H. Simpson, livestock feeder of Las Cruces, said that his experience in feeding stilbestrol showed that the hormone would help beef cattle make more rapid gains if feed had a higher ratio of grain and cattle were 600 lb. or heavier.

Keith Boller, graduate assistant at A&M, said there is little difference in the carcass composition of stilbestrol-fed cattle. Those in the A&M tests had a little lower per cent of lean, higher per cent of fat, and lower per cent of bone than those not fed the hormone.

Wintering Ration

In another discussion, J. H. Knox, head of A&M's Animal Husbandry Department, reported on the testing of rations for wintering stocker cattle. He found that a light ration of 1 lb. of cottonseed meal, 8.2 lb. of cottonseed hulls, and 4 lb. of alfalfa daily proved to be the most economical winter ration for stocker cattle. Cattle receiving a more liberal ration which included grain made greater gains, but feed costs were about 3¢ higher per head per day.

R. L. Blackwell, assistant professor of animal husbandry, said large type cattle gained faster than compact cattle, but pointed out that there was no difference in feed requirements per 100 lb. of gain. Feed consumed per 100 lb. of liveweight was also the same for the two types.

Continuing the discussion, Estel Cobb, assistant professor of animal husbandry, pointed out there was no difference in the carcass characteristics of large and compact cattle. Carcass grades, dressing percentage and wholesale cuts in carcasses are the same, he said.

Beef Trends

A. K. Mackey of the National Stock Yards, Oklahoma City, told the group that consumers are changing their meat-buying habits. He said they were demanding smaller and more economically-priced cuts. Mr. Mackey predicted that this would, in turn, effect a change in the production phase of the cattle industry.

The trend, he said, would be toward lighter weight cattle not carrying so much fat. He told stockmen that he looked for more cow slaughter in 1956 than in 1955 because of a reduction in cows and breeding herds in general. However, he predicted that the price of cow meat in '56 would be comparable to 1955 because of small storage reserves.

The day's program included an inspection of the experimentally-fed cattle in the college corrals. Ivan Watson, extension animal husbandman, was chairman of the program.

IDAHO WOOL CROP OFF 3%

BOISE, IDAHO — Idaho's sheep raisers produced 10,384,000 lb. of shorn wool last year, 3% less than the 1954 crop, the Idaho Woolgrowers Assn. reported recently. The estimated cash receipts of $4,673,000 for the 1955 wool were 13% below the $5,384,000 received for the 1954 production.

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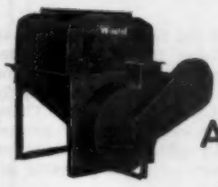

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'Stilbosol' plus protein ... puts more meat on market cattle

Feeding tests show need for ample protein in ration to get full gain-boosting benefits from 'Stilbosol'

Most cattlemen have watched 'Stilbosol' prove itself as a great beef gain-booster. New evidence indicates that top gains come by taking advantage of the 'Stilbosol'-protein partnership. Ohio State University scientists recently ran a series of feeding tests that proved you must keep the nutritional pipe line filled if you expect to get the most for your feed dollar.

Six groups of steers were fed a high grain ration for 84 days. Three of the six groups (controls) received different amounts of protein supplement without 'Stilbosol.' The other three groups had 10 milligrams per day of 'Stilbosol' added to the same basic rations. Some important facts show up in this comparison of results:

	CONTROLS			'STILBOSOL'-FED		
No. steers	7	7	7	7	7	7
Protein suppl. per head daily	None	½ lb.	1½ lbs.	None	½ lb.	1½ lbs.
Av. daily gain (lbs.)	2.00	2.14	2.37	1.97	2.59	2.85
% increase in daily gain	—	7%	18.5%	—	31.5%	44.7%

This experiment gives the cattle feeder two very important facts: 1. Protein supplement itself can produce extra beef. 2. 'Stilbosol' plus protein is *more than twice as powerful* in its ability to produce extra pounds of beef.

How will you use 'Stilbosol' in 1956?

Around 6,000,000 cattle were 'Stilbosol'-fed in 1955. If you are not yet using 'Stilbosol'-fortified supplements, talk it over with your feed supplier. He can show you the advantages of feeding 'Stilbosol' to get more beef at less cost and, in that way, help you increase your beef-feeding profits.

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Value of Feed Tech Training

By Dr. W. H. Hastings
Kansas State College

EDITOR'S NOTE: The importance of feed technology training in connection with today's more complex job of feed manufacturing is outlined in the accompanying article by Dr. W. H. Hastings of the department of flour and feed milling industries at Kansas State College, where the industry-sponsored feed tech school is located. This article is an excerpt from a talk by Dr. Hastings before the Kansas Bankers Agricultural School. Dr. Hastings noted the value of research and the dramatic improvements in feeding results in recent years, and then he went on to make the accompanying remarks on feed technology training.

It is said that the two most important things to a livestock feeder are the value of the feed and his skill as a feeder. Today the farmer can depend on the feed manufacturer for part of this skill because feeds supply both nutrients and husbandry. There is a feed for every stage of animal growth and production and feeds for protection against many parasitic infections.

Refinements in the sciences of animal nutrition and production are most valuable when properly applied. Feeds can be mixed more uniformly and at less cost today because the manufacturer has a better knowledge of production. Competition has made him just as interested as the farmer in profit and time.

A statement in a recent government publication (Inventory Policies of Feed Mills, U.S.D.A. Bul. AMS-70, Sept., 1955) almost exactly gives the reason for needing feed technology training: "Apparently, a majority of them (feed mill owners) have found that managerial and labor time could be more efficiently used in finding better sources of ingredients and achieving more efficient production than by watching the market closely and turning, fumigating and caring for grain and other ingredients in storage."

College Training Needed

Many full-time jobs have developed in the feed manufacturing business for which a college training is a decided advantage. For many years, grains, grasses, by-products and concentrates have been substituted for one another in varying degrees, even when their composition differed widely. This process was not too difficult when six ingredients were considered and when time was not as important in the standard of living as it is today.

Livestock feeds now take more formulation and production brainwork than ever before, and are more fun. Geometric solutions to complex economics problems can be set up and worked out by what is called "optimal" or "linear programming," as opposed to the "hunt and punch" system. From a wide range of ingredients, natural or synthetic, the recommended essential nutrients for each class of livestock can be exactly balanced, minimizing the cost.

A most up-to-date discussion of mixing (Mixing, The Universal Operation, Chemical Engineering, June, 1954) considers the process still more an art than a science. To learn this art and develop it into a science means understanding each ingredient used, its purpose in the formula, methods of feeding the final product, problems in storage, blending, conveying, bagging and transportation. We are aware that the dust collecting system must be balanced to avoid loss of expensive nutrients, that certain materials are electrostatic, that excessive time in mixing or speed of conveying may segregate ingredients rather than distribute them at random in a uniform blend.

And when you consider that no two feed mills are the same and each needs daily answers to many questions which cannot be found in a book, you see why the feed industry itself established a feed technology training school.

Industrial Science

By definition "technology" is industrial science. It has been suggested that a degree in feed technology be called a degree in diversified sciences. The main job of feed technology is to replace the traditional and empirical with the scientific. The raw materials of formula feeds are specified and defined by technology and the labor and capital in producing feeds are directed by technology. The market price of feeds reflects the standards of the technological effort going into their manufacture.

You do not have to be told of the value of the cereal technologist to the flour industry, where wheat is bought and flour is sold and used on definite specifications. The dairy technologist has brought product control to perishable, risky products and made possible higher prices for high food value. Fruit and vegetable technology has brought grading and pricing according to uniformity in size, color, characteristic of species and packaging. In the formula feed industry where each manufacturer uses any and all raw materials available to him, imagination, free enterprise and initiation stabilize the market, and technology directs production of dependable products.

Another definition of feed technology is the job of making money in processing feeds. To make money honestly is to make it by increasing the value of a raw material to a point where it is better or cheaper than if others were to do it. The training program at Kansas State College for this job is four years of diversified sciences balanced by chemistry, poultry, dairy, animal husbandry and economics.

In our own department, courses in survey of milling, elements of flour and feed milling, flow sheets and seminars are taken before technology and formulation are specifically applied to feeds. The training is valuable to the student and to industry not only for what is learned in college but for the potential learning on a job. It is not so important to us that a man can pick up an established pattern of operation as that he can leave it for a new or better one with ease and efficiency.

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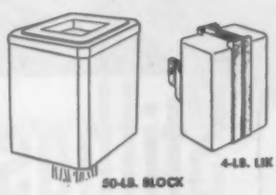

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EHRSAM BUYS FOUNDRY

WICHITA, KANSAS—Morse-Koob, Inc., a Wichita foundry, has been purchased by the J. B. Ehrsam & Sons Mfg. Co., Enterprise, Kansas. The Ehrsam firm, in business for 82 years, makes grain and feed equipment. The Wichita firm will now be known as Ehrsam Wichita Foundry, Inc.

CONVENTION CALENDAR

March 18-19—Quad-State Convention sponsored by Sioux City Grain, Feed & Seed Assn.; Martin Hotel, Sioux City, Iowa; sec., N. G. Nichols, 901 Missouri River Road, Sioux City, Iowa.

March 18-23 — Grain Elevator & Processing Superintendents; Muehlebach Hotel, Kansas City, Mo.; sec., Dean M. Clark, "Grain," Board of Trade, Chicago 4, Ill.

March 22-23 — Maryland Nutrition Conference for Feed Mfrs.; Shoreham Hotel, Washington, D.C.; chmn., Dr. G. L. Romoser, U. of Md., College Park, Md.

March 29—Illinois Swine Growers Day; U. of Ill., Urbana; chmn., S. W. Terrill, Dept. of Animal Science, U. of Ill., Urbana, Ill.

April 3—Purdue Egg Day; Lafayette, Ind.; chmn., David D. Jackson, Ind. Agricultural Extension Service, Lafayette, Ind.

April 5—Texas Feed Manufacturers; Hotel Texas, Ft. Worth; sec., Monroe U. May, P.O. Box 6666, Dallas 19, Texas.

April 6-7 — Texas Grain & Feed Dealers Assn.; Hotel Texas, Ft. Worth; sec., Ben Ferguson, 614 Meacham Bldg., Ft. Worth 2, Texas.

April 9-11—American Assn. of Feed Microscopists; Deming Hotel, Terre Haute, Ind.; chmn., Robert C. Wornick, Chas. Pfizer & Co., Terre Haute, Ind.

April 10-12—Council for Agricultural and Chemurgic Research; Congress Hotel, Chicago; chmn., John W. Ticknor, Council for Agricultural and Chemurgic Research, 350 Fifth Ave., New York 1, N.Y.

April 12-14—California Hay, Grain & Feed Dealers Assn.; Ambassador Hotel, Los Angeles; chmn., Jack Flammer, 5935 So. Malt Ave., Los Angeles 22, Cal.

April 12-18—National Fisheries Institute; 4-Most Hotels, Miami Beach, Fla.; mgr., Max Xavier, 1614 20th St., N.W., Washington 9, D.C.

April 16-17 — Nebraska Grain & Feed Dealers Assn.; Hotel Cornhusker, Lincoln; sec., Howard W. Elm, 917 Trust Bldg., Lincoln, Neb.

April 19—Illinois Feed and Nutrition Conference; Univ. of Illinois, Urbana; chmn., Dr. John H. Byers, Dairy Science Dept., Univ. of Ill., Urbana, Ill.

April 27 — Purdue Cattle Feeders' Day; Lafayette, Ind.; chmn., W. M. Beeson, Dep't. of Animal Husbandry, Purdue University, Lafayette, Ind.

May 3-5 — Kansas Grain & Feed Dealers Assn.; Kansan Hotel, Topeka; sec., O. E. Case, 901 Wiley Bldg., Hutchinson, Kansas.

May 13-14—Missouri Grain, Feed & Seed Assn.; Kentwood Arms Hotel, Springfield; sec., D. A. Meinershagen, Higginsville, Mo.

May 21-22 — National Cottonseed Products Assn.; Statler-Hilton Hotel, Dallas; sec., John F. Moloney, 19 S. Cleveland St., Memphis, Tenn.

May 23-25—American Feed Manufacturers Assn.; Morrison Hotel, Chicago; sec., W. T. Diamond, 53 West Jackson Blvd., Chicago 4, Ill.

June 4-5 — Eastern Federation of Feed Merchants; Hotel Commodore, New York; sec., Howard J. Benson, Eastern Federation of Feed Merchants, Sherburne, N.Y.

June 4-5 — Central Retail Feed Assn.; Schroeder Hotel, Milwaukee; sec., Eldon H. Roesler, 1712 West St. Paul Ave., Milwaukee 3, Wis.

June 4-5—Georgia Feed & Poultry Conference; Dinkler Plaza Hotel, Atlanta; sec., Will L. Kinard, 208 William-Oliver Bldg., Atlanta 3, Ga.

June 6-9 — Grain Processing Machinery Manufacturers Assn.; French Lick Springs Sheraton, French Lick, Ind.; sec., Raymond J. Walter, 511 Fifth Ave., New York 17, N.Y.

June 7-10 — Canadian Feed Mfrs. Assn.; Sheraton Brock Hotel, Niagara Falls, Ont.; reg., Herbert Hickling, Wm. Stone Sons, Ltd., Ingersoll, Ont.

June 11-12 — Montana Nutrition

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Conference; Montana State College, Bozeman; chmn., O. O. Thomas, Montana State College Agricultural Experiment Station, Bozeman, Mont.

June 12-14—Alabama Poultry Industry Assn.; Thomas Jefferson Hotel, Birmingham, Ala.; sec., W. L. Walsh, P.O. Box 567, Montgomery, Ala.

June 15—Pacific Northwest Grain Dealers Assn.; Davenport Hotel, Spokane, Wash.; sec., Pete Stallcop, 418 Peyton Bldg., Spokane, Wash.

June 17-19—Indiana Grain & Feed Dealers Assn.; Purdue Union Bldg., Purdue University, Lafayette, Ind.; sec., Fred K. Sale, 600 Board of Trade Bldg., Indianapolis, Ind.

June 17-19—Louisiana Poultry Improvement Assn.; St. Charles Hotel, New Orleans; chmn., Clyde Ingram, Louisiana Extension Service, University Station, Baton Rouge, La.

June 18-21—American Dairy Science Assn.; Univ. of Conn., Storrs; chmn., W. R. Hesseltine, Univ. of Conn., Storrs, Conn.

June 20-22—Delmarva Chicken Festival; Ocean City, Md.; sec., J. Frank Gordy, Delmarva Poultry Industry, Inc., Selbyville, Del.

June 28-30—Association of Southern Feed & Fertilizer Control Officials; Hotel Roanoke, Roanoke, Va.; sec., Bruce Poundstone, U. of Ky. Agricultural Experiment Station, Lexington 29, Ky.

July 17-20 — American Poultry & Hatchery Federation; Minneapolis Civic Auditorium, Minneapolis, Minn.; mgr., Ed G. Gray, 521 East 63rd St., Kansas City 10, Mo.

Aug. 7-10—Poultry Science Assn.; No. Carolina State College, Raleigh; sec., C. B. Ryan, College Station, Texas.

Aug. 10-11 — North Carolina Feed Mfrs. Assn.; Fort Sumter Hotel, Charleston, S.C.; sec., Louis Maxwell, Box 897, Goldsboro, N.C.

Aug. 13-14 — Wisconsin Nutrition School for Feed Men; U. of Wis., Madison; chmn., Gus Bohstedt, Dept. of Animal Husbandry, U. of Wis. College of Agriculture, Madison, Wis.

Aug. 20-21 — Kentucky Feed & Grain Assn.; Seelbach Hotel, Louisville; sec., W. C. Willock, P.O. Box 1914, Louisville, Ky.

Sept. 9-11—Grain & Feed Dealers National Assn.; Morrison Hotel, Chicago; sec., John C. Bowden, 100 Merchants Exchange Bldg., St. Louis 2, Mo.

Sept. 26-27 — Michigan Hatchery Conference; Michigan State University, East Lansing, Mich.; sec., Harry Hathaway, Michigan State Poultry Improvement Assn., East Lansing, Mich.

Oct. 4-5—Texas Nutrition Conference; Texas A&M, College Station, Texas; chmn., J. R. Couch, Dept. of Poultry Husbandry, Texas Agricultural & Mechanical College, College Station, Texas.

Oct. 15-16 — California Animal Industry Conference; Fresno Memorial Auditorium, Fresno; sec., John Gilmore, 1400 10th St., Sacramento 14, Cal.

Oct. 17-18—Assn. of American Feed Control Officials; Shoreham Hotel, Washington, D.C.; sec., L. E. Bopst, U. of Md., College Park, Md.

Dec. 3-4—Farmers Elevator Assn. of South Dakota; Huron, S.D.; sec., C. C. Anderson, 423 Citizens Bldg., Aberdeen, S.D.

1957

Feb. 4-6—Assn. of Southern Agricultural Workers, Birmingham, Ala.

Feb. 10-12—Wyoming Grain, Feed & Seed Dealers Assn.; Casper; sec., Everett L. Berry, P.O. Box 118, Sheridan, Wyo.

Feb. 15-17—Institute of American Poultry Industries Fact Finding Conference; Municipal Auditorium, Kansas City, Mo.; pres., Cliff D. Carpenter, 221 North LaSalle St., Chicago 1, Ill.

FTC Asks Funds for Antibiotic Price Study

WASHINGTON, D.C.—A possible study by the Federal Trade Commission into pricing practices in the antibiotic field is in the offing. The agency has a pending request before Congress for $100,000 to conduct such an investigation, but the FTC has indicated that without such an appropriation it will not be possible to make a thorough examination of the price structure in this field.

Officials of the FTC economic section say that while they always maintain a critical eye on all industrial pricing activities, they cannot make the necessary examination of antibiotic pricing without these additional funds. Otherwise, they would have to use small funds from other activities to run even a sample investigation, possibly a mail questionnaire.

Such an investigation would be aimed primarily at the drug and prescription trade concerning human consumption of antibiotics, but the pricing practices in the sale of antibiotics in the agricultural field would also be included to a certain extent. However, FTC officials indicate the latter segment of the trade would be of secondary concern. The chief interest of the agency would be centered in the drug store and prescription phase of antibiotic sales.

Atlas Feed Mill Destroyed by Fire

ATLANTA, GA.—The Atlas Feed Mill here was destroyed by an afternoon fire March 4 with the loss estimated by company officials at "at least $200,000." The two-story office building of the company adjacent to the mill was not damaged.

The fire apparently began as a result of welding being done over the week-end in the construction of a bin in the main building, the watchman said. The mill was wood covered with corrugated metal and measured 60 by 360 ft. It produced poultry and livestock feed and had a rated capacity of 11-25 tons an hour.

Atlas Feed Mill, Inc., is owned by D. H. Cameron and W. T. Farley. The loss included extensive stocks of formula feeds and feedstuffs as well as much machinery, Mr. Cameron said.

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July 14, 1955

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This is the first paragraph of a letter from Mr. R. M. Strang of the Strang Grain Co., Ft. Collins, Colo., successors to Moody-Warren. Of course, the "new roof" is easily taken care of, but this letter set us to thinking about the many Columbian Bolted Steel tanks in service even longer than these.

This 1924 photo shows the two Columbian Grain Tanks erected by Moody-Warren that year. In 1926, and again in 1928, pairs of tanks were added. This facility for easy, low-cost expansion is an important feature of Columbian Bolted Steel Grain Storage.

This 90,000 bu. country elevator, using Columbian Tanks and equipment was erected in 1955. It features Columbian - engineered blending and classification tanks, providing speed and versatility in handling grain.

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Actually, no one knows. None have ever worn out. Not one has been demolished by tornado or cyclone. Not one has ever been destroyed by fire. They have withstood floods and storms and the ravages of time. Many installations of the 1920's are providing efficient grain storage today.

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Feed manufacturers employing the Dawe's Ruminant Program are experiencing a new era in dairy feed sales and customer satisfaction. It is a volume-building program, including nutrition, merchandising and sales training assistance, for progressive feed manufacturers who seek leadership in the field of dairy feed sales.

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Nutrition Reports Presented To Feed Men in Virginia

ROANOKE, VA.—Nutrition information that the feed manufacturer and dealer and the feeder can use was reported to feed men of Virginia at the ninth Virginia Nutrition School at the Hotel Roanoke, Roanoke, Feb. 22-23. Attendance numbered 175 and included manufacturers, salesmen, field service men and suppliers.

Several feed companies sent a number of their representatives, and the talks were presented in a way that could best be interpreted and used by the men who actually contact the feeders.

The program and arrangements were planned by committees from Virginia Polytechnic Institute and the Virginia State Feed Assn. with cooperation of the Virginia Department of Agriculture and the drawing of personnel from the Nutrition Council of the American Feed Manufacturers Assn.

Dr. C. F. Huffman of Michigan State University discussed "Energy Value of Feeds for Dairy Cattle." The energy value of grain and other concentrates makes them more readily comparable on basis of TDN content than when comparing them with roughages. Also, the energy values of various roughages vary immensely, and there is much more difference between roughages than TDN value indicates. A pound of TDN in roughage is less valuable than an equal amount in concentrates.

In comparing immature alfalfa with alfalfa in full bloom fed with the usual amount of grain, the two hays were equal. However, when these hays were fed alone the immature alfalfa increased milk production markedly over the late cut. And its TDN value approached that of concentrates. We must harvest forages while there is still some "punch" in it.

Dr. Huffman stated that the art of feeding still has a place in feeding cattle, that no tables can replace good "cow sense." Try more or less grain than is generally the guide, then see what the response of the cow is. The feeding of ruminants is not actually very scientific at the present time.

The actual net energy of a feed is not stationary but variable. It depends on the balance of the ration with which it is fed, the purpose whether milk or meat, the level of feeding, inheritance of the animal, temperature of environment and other factors.

Fats in Feeds

Dr. B. S. Schweigert of the American Meat Institute Foundation, University of Chicago, discussed "The Use of Animal Fats in Feeds." He reviewed the availability of fats and the use of antioxidants added to assure the stability of the animal fats during storage.

It appears that the use of these stabilized animal fats in mixed feeds is continuing to increase. The use of these fats has gained wide acceptance in commercial feeds in the past few years, especially in dog foods and poultry rations. The increased feed and caloric efficiencies show that these fats are well utilized by dogs, chicks, swine and cattle.

The animal fats used in feeds are termed tallows and greases (largely beef and pork fat) available from the meat packing and rendering industries. The percentages in the feeds have ranged mostly from 1 to 3%. There has been some indication of reduced palatability in dairy cattle feeds, and at the same time the palatability of poultry and dog feeds was increased when an animal fat was added.

The use of antioxidants in treating animal fats in feeds also increases the stability of vitamin A and carotene during storage.

The ratio of protein to energy in poultry ration was discussed by J. C. Fritz of Dawe's Laboratories, Inc., Chicago. He emphasized the fact that the largest items in the feed are those ingredients that are there primarily for energy. So these have the greatest influence on the ingredient cost. The matter of high energy rations has emphasized the need for additional protein, vitamins and other essential factors to balance the high energy in a smaller quantity of feed needed for a pound of growth.

In general, the minimum satisfactory level of energy is determined by the capacity of the digestive tract. Above this level additional energy content of the feed may not increase growth rate or egg production but it will improve feed conversion. The number of pounds of feed required to produce a pound of weight gain or a dozen eggs will vary inversely with the energy content of the feed.

For starting chicks, the ration should furnish 42 calories of productive energy per pound for each 1% of protein. After the first five weeks this should be at least 47 calories. Higher energy content tends to cause deposition of more fat which improves the finish of the broilers.

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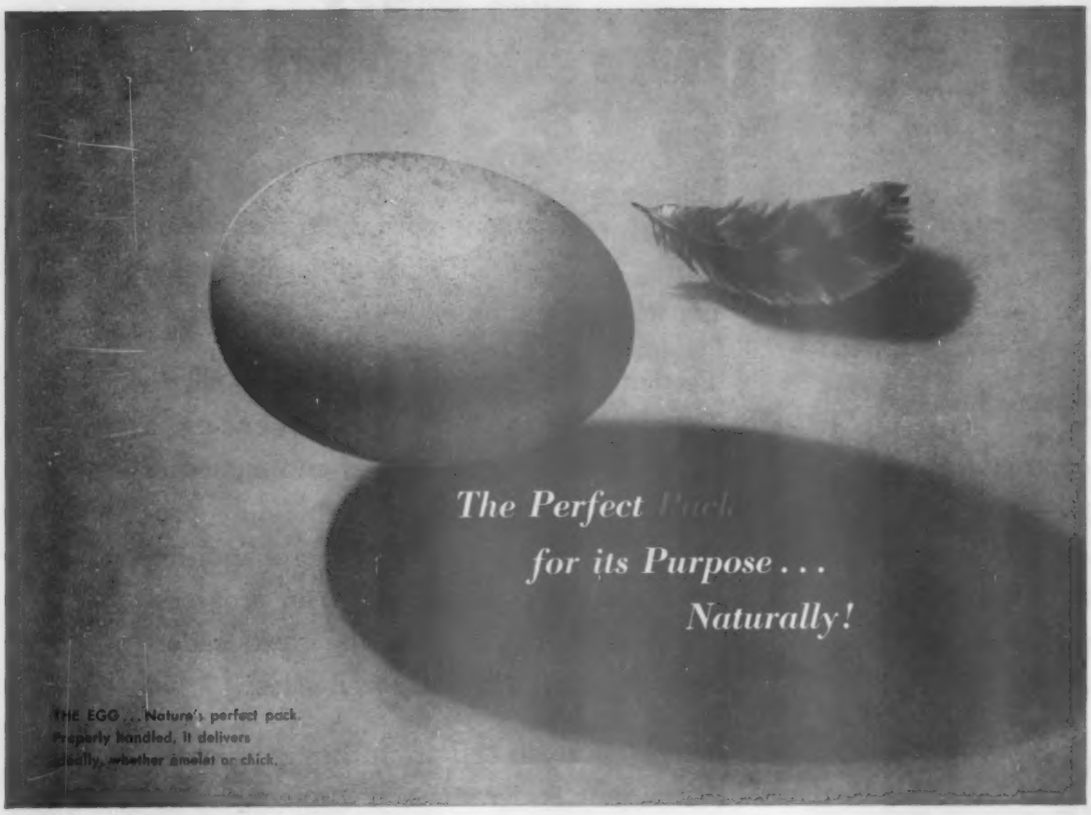
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make excellent gains on not more than 29 calories of productive energy for each per cent of protein. With turkey poults, lysine is likely to be the first limiting amino acid.

Laying hens do best on a high ratio of energy to protein. A ratio of 55 calories for each per cent protein has been suggested. Some data suggested as much as 60 calories.

Since fat contains approximately 2½ times the energy content of grains it may be used to increase the energy content.

Feeding Hogs

Dr. R. F. Kelly, meat technologist at VPI, discussed the feeding for the meat type hog. He stated that while the geneticist is changing the inheritance of meat type hogs, the nutrition man can make some changes by his method of feeding. He stated that a meat type hog is one that is not overly fat and is meaty by virtue of heavy muscle. Research work has shown that the back fat thickness is the best single measurement for estimating the ratio of lean to fat in hog carcass. The carcass that will yield 50% of the weight in the four lean cuts (ham, loin, picnic shoulder and Boston butt) is considered a meat type carcass.

He stated that muscle formation in the hog increases from birth up to 16 weeks of age and then slows up while fat deposition increased progressively up to market weight.

The control feeding during the finishing period could increase the percentage of lean. Since hand feeding is not practical in commercial feeding operations, a dilution method may be used, that is, using feeds higher in fiber. Alfalfa, bran or oats were used to dilute the grain or energy feed. Rations high in fiber will press the rate of gain and increase the feed per pound of gain.

Antibiotics have given protein sparing effect in many experiments and in lower protein rations antibiotics increased the lean cut yield. The only demonstrable effect on hog carcasses treated with stilbestrol was the development of the mammary glands which means seedy bellies.

It appears to be in the realm of possibility to use combinations of limited hand feeding, high fiber feeds to dilute rations, high protein levels and use of antibiotics supplementing low protein rations to increase the volume of meat type hogs going to market.

Feeding Milk Cows

Dr. M. F. Ellmore of VPI discussed feeding milking cows mainly from the standpoint of supplementing various grades of forages. He said that a 1,000 lb. cow would eat 30 lb. of hay or hay equivalent if it were the very top quality hays and silages but only 20 lb. of average quality forage, and when low grade or poor quality roughages were fed, the same cow would only eat 15 lb. per day. The need, then, is two-fold. The supplemental feed must contain sufficient protein to balance the ration and at the same time supply sufficient energy to take care of the greater needs for those cows eating the same amount of low grade roughages.

The amount of low grade roughage indicated here would just barely be sufficient for the cows' maintenance. However, the consumption of twice this amount of excellent forage would give the cow nutrients to make a considerable amount of milk before the grain feeding needed to come into the picture. Dr. Ellmore said that it is the extension man's and the feed man's business to take the enormous amount of results of research and interpret it for the feeder.

Feed Control

C. F. Bruce, feed inspection supervisor of the Virginia Department of Agriculture, discussed the greater problems that medicated feeds brought into the feed control program. He especially emphasized the necessity of proper labeling to be acceptable to the control agency. The necessary labeling has been set up because of the feeder's lack of knowledge of drugs and the potential hazards that may be caused by the misuse of medicated feeds.

There is the problem, too, of careful consideration to the food product which is produced from animals consuming the drugs and to make sure there is no carryover into the milk, meat and eggs which would render them unfit for human consumption.

Mr. Bruce told the group that five years ago there were 250 different medicated feeds registered in his office, while today there are more than 700 registered.

Arsonic Acids

Dr. D. V. Frost of Abbott Laboratories, North Chicago, reviewed work on arsenicals in feeds. Certain arsonic acids are widely used in chicken and turkey feeds in combination with antibiotics to stimulate growth, improve feathering and feed efficiency. Addition of an arsonic acid costs 5¢ per ton, or less, Dr. Frost said, and an improvement in feed efficiency in excess of only ½% allows the arsonic acid to pay for itself.

He went on to cite studies showing where 3-nitro-hydroxyphenyl arsonic acid and arsanilic acid have resulted in early physical maturity of pullets, more eggs and more efficient conversion of feed into eggs. Positive responses have been obtained where disease level was high, generally where high antibiotics also improved production. Tests by feed manufacturers themselves are warranted along this line, Dr. Frost said.

Continuing, he said that "improvement in growth rate and feed efficiency has been repeatedly demonstrated for arsonic acids over antibiotics in turkey starter rations. Further studies on value to market weight are needed."

Dr. Frost also noted use of arsonic

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acids for prevention or control of various diseases of poultry and swine. Included is the use of an arsonic acid plus an antibiotic to prevent scours and other disease conditions in pigs.

Arsenicals appear to have growth promoting value for calves, with some preventive value against scours.

From evidence at hand, Dr. Frost said, arsonic acids are not involved in relation to the "hemorrhagic syndrome" of poultry.

New promising applications include improvement in reproductive performance, control of certain livestock diseases, and counteraction of selenium toxicity in areas where this is a problem.

Non-Protein Nitrogen

Non-protein nitrogen for feed was reviewed by Dr. D. G. Green of Allied Chemical & Dye Corp. The recognition of the ability of bacteria in the rumen to produce essential amino acids from simple nitrogen sources such as urea has led to the wide use of urea in commercial feeds for ruminants.

While the present limitation is 3% of the concentrate feed and 1% in the entire ration, some studies indicate higher levels may be possible.

For comparison of value, 14 lb. urea plus 86 lb. corn would approximately replace 100 lb. of a high protein ingredient.

Dr. Green talked of much of the research work now in process on rumen digestion to determine just what steps take place in the ruminant's digestive system in converting nitrogen products into the essential type of proteins.

Dr. W. B. Bell, associate director of the experiment station and five of

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the station's staff members reviewed the "Highlights of Today's Nutrition Research at VPI." Dr. R. W. Engel of the biochemistry and nutrition department reviewed work on the influence of highly chlorinated naphthalenes and its influence on the conversion of carotene to vitamin A.

Other work reviewed included the influence of low copper forage on nutrition of ruminants, the composition of cooked garbage and its nutritive value for swine, the effect of treating soil with ethylene dibromine and the bromine content of hay and of milk produced from it, as well as forage grown on untreated soils in the Tidewater area of Virginia.

Minor element interrelationships in animal nutrition are under study. Results indicate that the tolerance for molybdenum can be influenced by the amount of inorganic sulfates in the ration.

Dairy Cattle Nutrition

Dr. W. A. Hardison of the dairy science staff reviewed work on the nutritive value of grass silage as influenced by various preservatives. The nutritive value or palatability was not improved by adding either bisulfite or a mixture of molasses and urea. The odor was improved. The variation in the composition and digestibility of the top of alfalfa plants was compared to the bottom of the alfalfa plants. The tops were markedly higher in protein and TDN. He discussed the variation in the development in calves and heifers grown on limited grain and high roughages as compared to normal feeding. This work is in progress.

Adding soybean lecithin to an all-hay ration of heifers had no apparent effect on dry matter digestibility. The addition of Fab (a detergent) was observed to lower digestibility slightly. A two-year field survey study of herds with breeding difficulty gave no clear-cut evidence that faulty nutrition was the cause of low conception rates in these herds. Indirect evidence indicates, however, that management plays an important role in maintaining a good breeding record.

By-products of poultry plants as poultry ration ingredients were discussed by Dr. E. L. Wisman of the poultry department.

Provided feather meal is at least 70% hydrolyzed, most states now accept it as a registered feed ingredient, and poultry nutritionists are approving its use in formula feeds up to 3 or 4% of the ration, Dr. Wisman said.

He said insufficient data are available to enable nutritionists to recommend poultry tankage for state registry at the present time. Reports from other stations and preliminary data from VPI indicate that it may be an acceptable product in properly formulated rations.

Swine Research

The creep feeding of pigs was reported as highly beneficial by Dr. C. C. Brooks of the animal husbandry department. He found that a complex feed containing sugar and made into a soft pellet was the most beneficial. In free choice feeding trials, pigs ate more protein than was necessary to balance their ration in some cases and in others failed to eat enough protein. Palatability of the protein appeared to have much to do with how well the pig would balance his ration.

Protein studies indicated that peanut meal was not satisfactory as the only source of protein supplement for growing pigs.

Molasses at levels of 5 and 10% did not increase rate of gain.

Dr. Brooks said inedible grease at levels of 4, 8 and 12% resulted in a slight increase in rate of gain but required more TDN per pound of gain when it was added to a ration of shelled corn and supplement. A study in progress, he said, indicates that TDN of inedible grease can be more economically used when it is added to high fiber rations at the level needed to bring TDN up to that of shelled corn. Increasing the level of protein in high fat rations failed to increase gain.

Corn and cob meal gave a slightly lower rate of gain than shelled corn but satisfactory gains were made on each. Slightly more gain was made per bushel of corn when corn and cob meal was used in most of the tests.

Beef Cattle Studies

Reporting on beef cattle research, Dr. W. S. Wilkinson of the animal husbandry department said urea and processed feather meal appeared to be satisfactory protein supplements at the levels tested. When processed feather meal constituted more than one third of the grain mixture, it was unpalatable to some of the calves.

An experiment with yearling steers was designed to study the effect of additives of crude carbonate phospholipids—low cost waste product of the vegetable oil refining industry—to feed for fattening beef cattle in dry lot and pasture. The materials appeared to have value at least equivalent to their energy content and may be useful to decrease dustiness of protein oil meals.

A test with steers fattened on pasture involved stilbestrol, Terramycin and stilbestrol plus Terramycin. No

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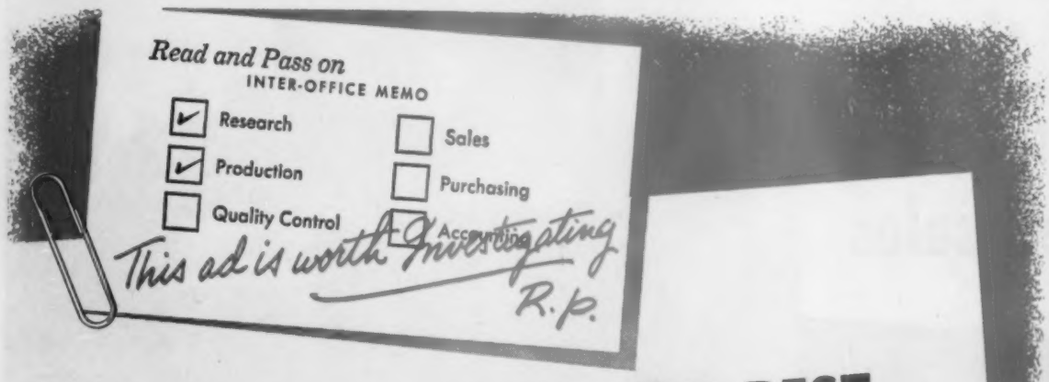

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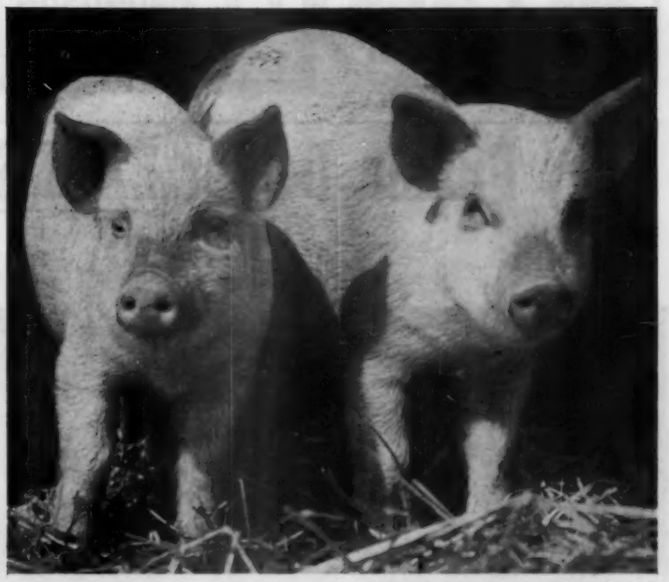

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conclusions could be drawn from the one trial, but Dr. Wilkinson said the addition of stilbestrol increased rate of gain, teat length and area of the loin eye muscle and had no significant effect on carcass grade or dressing percentage. A combination of stilbestrol and the antibiotic increased teat length and area of loin eye muscle and had no significant effect on rate of gain, carcass grade or dressing percentage. Terramycin, he said, had no effect on any of these.

The banquet speaker was W. T. Diamond, secretary of AFMA. The state feed association president, James W. Boehling of Richmond, was toastmaster, and Dr. Raymond Parkhurst, Roanoke, immediate past president of the Nutrition Council of AFMA, introduced Mr. Diamond.

Mr. Diamond said that the AFMA membership represented 75% of the manufactured feed in U.S. Also, he noted that feed manufacturing stands in ninth place among all manufacturing industries in the country. He stated that a trade association must be useful to its members and indicated the following: look out for the interest of members, disseminate information, discourage unethical practices, be alert for legislation for or against the industry, be an interpreter to the industry, bring about mutual understanding and cooperation, promote research and provide public relations.

Mr. Diamond discussed the new concept of feeds to foods. The interrelation of medicants and basic feeds in nutrition and this effect on nutrition is not of a static nature.

Probably, applied nutrition has been put into use in the feed business more than some improved business management. He noted that within a few years time the amount of feed to produce a broiler had changed from 14 lb. to 8.5 lb. of feed.

He referred to one manufacturer who used 29 ingredients in his total feeds in 1945 and last year used a total of 63 different ingredients. Feed scientists—in industry and in experiment stations—are developing new feed ingredients, including supplements that produce increased growth, health and well being in poultry and livestock.

This nutrition school was proclaimed to be the most informative as well as best attended school that has been held in Virginia.

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Frank N. Getman Is New President of Hess & Clark, Inc.

Frank N. Getman

ASHLAND, OHIO—Frank N. Getman was elected president of Hess & Clark, Inc., at a recent meeting of the company's board of directors here. He succeeds Hermon A. High, who has been elected board chairman. Mr. High, who is also a vice president and director of Vick Chemical Co., will continue to devote a considerable part of his time to Hess & Clark.

A native of Ilion, N.Y., Mr. Getman was graduated from Cornell University in 1934 and joined the Vick Chemical Co. in 1937. In 1946, following his return from service, he joined the Wm. S. Merrell Co., Cincinnati, manufacturer of pharmaceutical specialties for the medical profession. He became vice president of Merrell in 1949.

Mr. Getman joined Hess & Clark in 1955 when the company became an operating division of the Vick Chemical Co., serving as executive vice president.

Hess & Clark has grown steadily since its founding in 1893. Currently the company is expanding its research facilities at its 460-acre farm located near Ashland and is supporting a number of important research projects at leading universities and agricultural experiment stations.

The firm markets a number of animal and poultry health products.

Other officers of the company are Donald E. Clark, vice president in charge of production; Russell H. Eshelman, vice president in charge of sales; Thomas J. Budd, treasurer; Harold E. Andrews, Jr., secretary, and Leo J. Lindsay, comptroller.

Items Removed from CCC Sales List

WASHINGTON — The monthly Commodity Credit Corp. sales list issued last week by the U.S. Department of Agriculture does not contain cottonseed oil, linseed oil and broken rice in the list of CCC holdings available for sale to commercial buyers during March.

These items have been removed from the list because of depleted stocks, USDA said.

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How much E is enough?

More and more authorities are coming to regard vitamin E as part of a nutritionally complete poultry ration. We think you'll be interested in some of the recently published suggestions:*

Source	Year	Type of Feed	Amount Suggested
Prof. Jacob Biely University of British Columbia Department of Poultry Science Vancouver, British Columbia	1955	Turkey starter, grower, and breeder.	6,800 I.U./ton
Dr. J. R. Couch Texas A. and M. College College Station, Texas	1955	Turkey breeder.	5,400–8,200 I.U./ton
Dr. Milton Scott Cornell University Dept. of Poultry Husbandry Ithaca, New York	1953	Turkey breeder, starter, and grower.	6,800 I.U./ton
	1954	Duck breeder.	6,800 I.U./ton
Dr. Harold Yacowitz Ohio Agricultural Experiment Station Poultry Department Wooster, Ohio	1955	Turkey breeder.	10,000 I.U./ton
New England College Conference on Poultry Rations	1956	Turkey breeder and starter.	8,000 I.U./ton
		Turkey grower.	4,000 I.U./ton
Prof. F. E. Mussehl Univ. of Nebraska College of Agriculture Lincoln, Nebraska	1954	Turkey breeder.	10,000 I.U./ton
Dr. S. J. Slinger Ontario Agricultural College Dept. of Poultry Husbandry Guelph, Ontario, Canada	1954	Turkey breeder, starter, and grower.	6,800 I.U./ton
Dr. James McGinnis State College of Washington Dept. of Poultry Science Pullman, Washington	1955	Turkey breeder.	10,000 I.U./ton
Dr. E. P. Singsen University of Connecticut Poultry Science Department Storrs, Connecticut	1955	Chick starter and broiler.	14,000–22,000 I.U./ton†

†Dr. Singsen's recommendation covers total vitamin E from all sources. This allowance may be reduced in the presence of an antioxidant.

*Literature citations will be supplied on request to DPi.

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The Last Three Feet

The nine employees of Joe Brooks' mill at Hansen's Creek and the branch at Endeavor were having a wonderful steak dinner at the Hotel Manitou. This was a regular thing preceding the monthly sales training meeting. Joe always footed the bill, but he expected the employees to come up with some sales ideas later, which eventually would pay the cost of the dinner and also turn in some profit as well.

But tonight Joe was not at the dinner. His place was occupied by Mary Brooks, his attractive wife. She was clad in a light blue suit and white blouse and she certainly was the center of a great deal of attention, especially from Milt Peters and Smiley Johnson who appeared to be more woman-minded than the other employees.

"Gee, Mary, that is wonderful apple pie they've got here," said Milt. "Do you think the expense account would stand my having another piece?"

Mary smiled. "I think so, if you want it that badly," she said. "But be sure to come up with a good sales idea at the meeting so Joe won't mind the extra expense."

"And don't fall asleep like you do during the daytime once in a while," kidded Pop. "When you sleep on a sack of feed, we can't sell that sack without rolling you off. And that always looks so bad to farmers."

The employees laughed and so did Mary. "Mary, don't you believe him," Milt pleaded. "Just because I was sick one morning, a stomach upset, and I sat on a sack of feed to rest for awhile, they say I sleep all the time."

"Gee, you get stomach upsets quite often, Milt," laughed Butterball.

"You keep still, Butterball," Milt said a little angrily. "If you don't I won't get you another blind date, even if you beg me to."

Butterball blushed and said nothing.

"Well," said Mary, "let's get over to the mill. Joe will be waiting for us. I hope he feels better after his nap. He was all tuckered out."

At the mill, however, there was no sight of Joe. But the employees sat down in folding chairs as usual, and then Mary asked Pop Henley to step up to the wrapping counter.

At this moment, Joe came forth from behind some stacks of feed bags, and moved to the other side of the wrapping counter facing Pop Henley. The employees gasped at his appearance. He was unshaven and stern, and he was clad in a red checkered flannel shirt, grey summer slacks and wore a yellow tie.

"Pop," Joe said, looking fixedly at his elderly employee, and handing him a yardstick. "Measure the distance between you and me."

Pop looked puzzled, but took the rule and measured. "Why, the distance is about three feet," he said.

"Right," Joe said, his face still stern. "Now, Pop, don't pull any punches. Tell me exactly how I look to you. I chose you for this job, because I know you always say what you think."

Pop swallowed hard, thought about taking a chew of Copenhagen, but decided against it. "Well, Joe," he said slowly, "in the first place you aren't shaved. Got about a two days' growth there. It looks pretty tough."

Joe nodded coldly. "Go on."

"And that red shirt and yellow tie don't go with those grey summer slacks," continued Pop critically. "In fact, it's a hell of an outfit to wear in a feed store."

"You think so, eh?"

No Screwy Clothes

"I know so," Pop said courageously. "If I came into a feed store and the owner looked like that I'd go

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4. Entries will be judged ONLY on the merit of contents — NOT ON LITERACY OR CHOICE OF WORDS.
5. Winner of the Daffin Mobile Mill will be selected by an impartial panel of judges, whose decision shall be final.
6. Employees of Daffin Manufacturing Company and their families are not eligible to compete in the contest.
7. Contest is limited to the continental United States and is subject to Federal, State, and Local regulations.
8. All entries become the property of Daffin Manufacturing Co.

Additional Entry Blanks and information can be obtained by writing direct to Daffin Manufacturing Company, Lancaster, Pa.

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Chicago Board of Trade
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New York Stock Exchange
and Other Principal Commodity
and Security Exchanges

somewhere else to buy the second time. I don't go for screwy clothes."

"Is that all?" Joe asked in the sharp, direct manner of a Dragnet detective.

"Nope, you musta been eating onions. I can hardly stand it. I guess I'll step back a couple of feet, if you don't mind."

"Okay," Joe said slowly. "Anything else?"

"Well," Pop went on. "Right now, when I was talkin' to you, you looked off on one side like you wasn't payin' any attention to me at all."

In an instant Joe began to smile. It was his old, familiar warm smile and it melted the coldness, the tenseness of the room. The employees heaved a sigh of relief and relaxed. Joe sat on the wrapping counter and looked at his men.

"Boys," he said, "this dinner with Mary in charge and this little skit were all arranged. Only Pop wasn't in on the deal. He gave answers as they came to him."

"But, why?" asked Butterball, the slow one. "You aren't that tough when dealing with customers, Joe."

The feed dealer shook his head. "No, I hope I'm not. But what I wanted to bring out to you boys is that when many customers come up to this wrapping counter to buy they stand within three feet of each of us. And they can see an awful lot."

Looks Count

He paused to let this observation sink in. "And insofar as we are concerned, we want them to see only favorable things when they stand there. We want them to see us neatly shaved every day, wearing clean clothes, having an attentive manner. And please, lay off the onion and the garlic until the evening meal. You can blast the wife or the girl friend with a breath like that and make amends with a box of candy, but rarely can you get a customer back after such a barrage."

A couple of the employees grinned at that.

"In other words, men," Joe said seriously, "when the customer gets within three feet of us and can see us as through a microscope we've got to be 100% in every respect. If we aren't we don't make a sale."

"Maybe that's true," said Windy Kramer, the routeman, "but the customer may not look so hot to us at three feet, either. He is often unshaved, wears old clothes, chews on a smelly cigar or puffs smoke right in our faces. How about that?"

"I'm glad you mentioned that," Joe said. "We don't care what the customer looks like, how he acts toward us, short of knocking us cold. Just so long as he wants something and has money in his pocket to pay for it—we should make him feel that he is the king in our store. Is that clear?"

"It sure is," declared Milt, "but when I go to see certain people—not customers exactly—I find it pays to get closer to them than three feet."

"That's an entirely different field of operation," Joe said sharply. "We are concerned here with pleasing customers and getting them to come back. Let's see if we can get and hold the reputation in this area of being the most courteous sales staff, and giving the customer the most for his money. That's all I'm asking."

Daffin

OFFICIAL ENTRY BLANK

Daffin Manufacturing Company
Lancaster, Pennsylvania

Gentlemen: — "I WANT A DAFFIN MOBILE FEED MILL, because .....

(Signed) ..... Date .....

Address ..... Feed Brand .....

ALL ENTRIES BECOME THE PROPERTY OF DAFFIN MANUFACTURING CO.

DOG FROM ASIA THRIVES IN AMERICA

This is Ming Tali II, a Lhasa Apso, a breed originally found in Tibet. Says his owner, Eloris V. Lirbmann of Los Gatos, Calif.: "Ming Tali II has been raised on Vitality Body Builder. He loves it, and at 10 months of age won his first major show and a group placing. Our females eat Vitality Professional Dog Food, and although the average litter is three, we have six puppies. My puppies are weaned onto Vitality Professional." (Letter on file.)

VITALITY
• A VITALITY DOG FOOD FOR EVERY NEED
• SUPER-IRONIZED AT NO EXTRA COST
See Your Vitality Dealer or write
VITALITY MILLS, INC.
250 West 57th Street • Chicago 36, Illinois

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Bulletin "What's New in Food and Drug Research" available on letterhead request.

ILLINOIS GRAND OPENING — At the top, left, is the new store of the Bush Hatchery & Milling Co., Onarga, Ill., which was visited by close to 1,000 feeders at the grand opening recently. Top right, from the left, are some of the persons who helped make the opening day a success. Oran Williams, DeKalb Agricultural Assn., Inc., Pontiac, Ill.; Dean S. Swift, Swift & Co., Chicago; Gail Harms, Harms Farms Specialties, Crystal Lake, Ill., distributor for Belle City Engineering Co., Racine, Wis.; Richard Shapland, manager of the new Bush Store; L. Doten Bush, general manager of the Bush Hatchery & Milling Co., Dwight, Ill.; Earl Jacobsgaard, manager of the Bush store at Dwight; William Helgen, Dr. Salsbury's Laboratories, Decatur; Phillip Bolinger, Consolidated Products Co., Normal, Ill.; Curtis Willgeton, Myzon, Inc., Chicago; and Henry Dahl, Anderson Box Co., Centralia, Ill. At the bottom is a view of the Swift & Co. booth during the open house. In the business suits are James H. McRoberts, Swift & Co., Chicago, on the left, and Mr. Swift on the right. They are talking with visitors to their booth. Picture No. 4—Behind the registration counter below, right, are, on the left, Mr. Shapland, and Miss Elizabeth Houck, who came from Dwight to help out. (See story on following page.)

AUTOMATIC FORMULA CONTROL

WITH W & T MERCHEN SCALE FEEDERS

This feed blending line in the North Dakota Mill & Elevator Company includes W & T Merchen Scale Feeders, with a complete electric control system which permits selection of the desired formula from a remote operating panel. On this modern, fully automatic blending line, over twenty-five ingredients are fed continuously in the blending of formulated mash feeds.

All 16 Scale Feeders are electrically synchronized with the pick-up and mixing conveyor — thus protecting the entire blending line if trouble should develop. By installing the feeders on alternate sides of a common conveyor, the space requirements were cut in half.

In addition, 9 W & T Self Powered Feeders are installed for the accurate and continuous blending of formulated scratch feeds.

W & T Representatives — trained in materials handling — will be glad to show you how W & T Merchen Feeders can solve your feeding and blending problem. There is no obligation, so why not call them today?

ANOTHER W & T MERCHEN FEEDER INSTALLATION — providing accurate and dependable blending, by WEIGHT, for the Feed Processing Industry.

WALLACE & TIERNAN
COMPANY INCORPORATED
BELLEVILLE 9, NEW JERSEY • REPRESENTED IN PRINCIPAL CITIES

The best WEIGH is the MERCHEN way.

M-28

Grand Opening Adds Latest Chapter in

Illinois Feed Retailer's Success Story

By HENRY S. FRENCH
Feedstuffs Editorial Staff
(Pictures on preceding page)

How does a dealer influence nearly 1,000 farmers and feeders to leave their happy homes and come to town on Friday and Saturday to visit his store?

For an answer you are referred to L. Doten Bush, general manager of the Bush Hatchery & Milling Co., Dwight, Ill. When Mr. Bush held the grand opening of his new store in Onarga, Ill., Feb. 24-25, close to 800 persons registered. At least 800 attended a meeting at the school auditorium the evening of the last day.

In Onarga, population 1,600, a turnout such as this does not just happen. In the case of the Bush store, the attendance was caused by months of careful planning, and backgrounded by several years of promotional experience and business acumen.

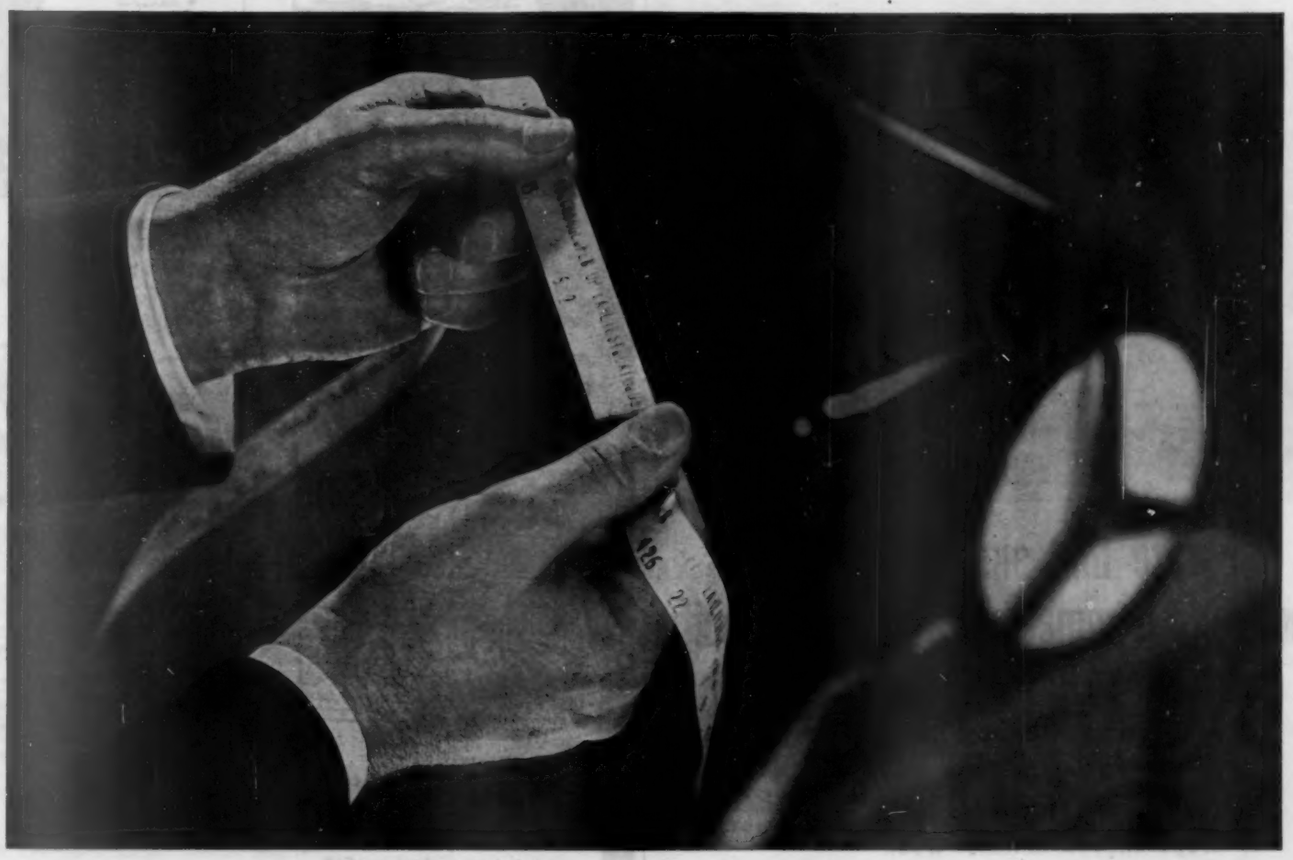
The experience goes back 27 years, when L. W. Bush, father of the present head of the firm, started the first Bush Hatchery & Milling Co. in Dwight, Ill. In subsequent years, other stores were opened in the Illinois towns of Morris, Kankakee and Streator.

In 1949, L. Doten Bush joined his father. After only one year, the father left the business in the hands of his 25-year-old son. That he is able to open a fifth store at the end of five years speaks well for his ability and the Bush organization.

Young Mr. Bush is a graduate of Purdue University, Lafayette, Ind., with a degree in engineering. After three years in the Navy he worked for more than a year as quality control engineer for a paper company. Another six months was spent as a process engineer. Then he became disenchanted with his chosen profession and began a search for experience. In the course of a year he had several different jobs — five selling intangibles, night clerk in a hotel, etc., and saw much of the country. As much as any other experience, Mr. Bush credits this year as the most important in shaping his philosophy and broadening his outlook to qualify

the ticker tape tells the tale

DOW



FEEDSTUFF PRICES VARY . . . YOU'RE AT A BUYING ADVANTAGE WITH FORMULA FLEXIBILITY THROUGH

Methionine-supplementation

When the ticker lists a good buy for broiler and turkey feeds —remember that methionine-supplementation gives you wider formula latitude. You can adjust formulas to take advantage of current prices. In high-energy feeds, proteins supplemented with methionine are better utilized as building blocks. You have greater versatility in choice of high-energy ingredients of relative nutritive value. You can lower formulation costs without lowering feed quality because added methionine *balances* any variation in natural methionine when you use feed ingredients interchangeably. That is why many feed mixers include methionine-supplement in all registrations of broiler and turkey feed formulas. We shall be glad to furnish your nutritional adviser with complete information. THE DOW CHEMICAL COMPANY, Agricultural Chemical Sales Department, Midland, Michigan.

you can depend on DOW AGRICULTURAL CHEMICALS DOW

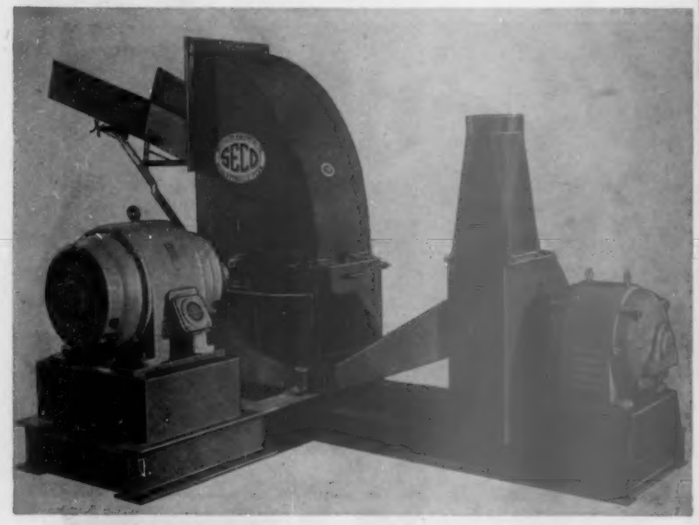
him for managing his company.

A Bush store offers formula feeds, concentrates, and in all of them except at Onarga there is a mill for custom grinding. If justified, a mill will be installed in the newest store. The firm also is a cooperative hatchery with the DeKalb Agricultural Assn., and sells chicks. Mr. Bush is an authorized feed dealer of Swift & Co., Chicago. He also handles products of Dr. Salsbury's Laboratories, Charles City, Iowa; waterers and feeders of Hawkeye Steel Products; mixes of Myzon, Inc.; products of the Consolidated Products Co.; brooders of the Warner Brooder Co.; products of the Anderson Box Co.; and a farm mixer of the Belle City Engineering Co., Racine, Wis.

Bush business is made up of 66% feeds, 17% chicks, and 17% other products. Around 60% of the feeds are Swift concentrates used in making poultry feeds. This poultry feed is produced on a custom mill and sold under the Bush trade name, "B-Line."

The Bush philosophy of business revolves around benefits to his customers. The only way a business can justify a profit and its existence, says Mr. Bush, is to sell good merchandise to produce a profit for his customer and let him grow. We are long on service, he says. We take the initiative and don't wait to be asked. Some returns are garnered from service calls, he says, because this gives the dealer an opportunity to see how a farmer or feeder operates and check his needs. This will help the dealer tailor a service program for the feeder. All business is conducted on a high moral plane, and this feeling is inculcated in each employee.

"We are proudest of our employee relations program," says Mr. Bush. "Each employee should grow in the business, as well as socially and mentally. His family is considered an integral part of the firm. When we need a new man we look for one with a lively and open mind, who wants to improve. He is told he will get better each day. The man makes the difference. We can have the best fa-



Separate mill and blower motors keep this hammermill at peak capacity

SECO Super Twin Drive

★ ends electrical problems
★ uses less horsepower
★ solves overloading problems
★ stops uneven hammer wear
★ eliminates high demand starting

Horsepower needs go down and operation picks up when the job is divided and balanced between independently powered hammermill and blower. Starting demand is reduced 25%.

Grinding capacity is stepped up 30% to 40% by the location of the blower on the back of the mill. The feed travels a direct line, eliminating uneven hammer wear. This hammermill is designed so that no device is necessary to prevent "slugging."

Trouble-free operation is "built in"
- Heavy duty, electrically welded body
- Longer, heat-hardened hammers
- Electronically balanced rotors
- Bigger steel rotor discs
- Coarse, medium or fine screening
- Fast, easy screen change
- Adjustable feed table
- Heavy steel base
- Sealed, self-aligning bearings
- One-piece alloy steel blower
- Removable blower liner

SOUTHERN EQUIPMENT COMPANY
Dept. "B"
Goodlettsville, Tennessee

Please send me complete details on the Seco Super Twin Drive. This request places me under no obligation.

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SOUTHERN EQUIPMENT COMPANY
Goodlettsville, Tennessee

Source of easy profits!

Here's why . . . Because your customers know they need Morton T-M Salt. In practically every farm publication they read in 1956 they will see eye-catching, memorable sales messages like these . . .

Morton Trace-Mineralized Salt
for more milk, husky calf crop
Morton Trace-Mineralized Salt
for healthier hogs, healthier profits
Morton Trace-Mineralized Salt
for healthier cattle, healthier profits
Morton Trace-Mineralized Salt
for more wool, big lamb crop!
MORTON SALT

Thus, when anyone comes into your place of business, all you have to do is say:—"Do you need Morton Trace-Mineralized Salt today?" Chances are they will need some. Can you think of any easier way to sell and make a more consistent profit?

What do we do for you? The Morton Salt Company backs the name "Morton" and a fine product with the most powerful advertising ever!

In 1956, in practically every issue of the best-read farm publications in your trading area—State Farm Papers; Regional Publications (Capper's, Successful, Progressive, Southern Planter); Special Livestock Magazines (Breeders Gazette, Western Livestock Journal, Hoard's Dairyman)—you will find advertisements urging your customers to buy Morton T-M Salt. That means they are presold on Morton T-M Salt . . . ready to buy at the drop of a hint.

Stock up on Morton Trace-Mineralized Salt. Be ready to meet the demand of your customers. When a man wants salt for his livestock, he wants Morton T-M Salt.

★ Your customers want it ★ Their livestock need it
★ Your feeds will do a better job ★ You'll make more profit

Sell it by the bag—or block

Morton TRACE MINERALIZED T-M Salt
MORTON SALT COMPANY • CHICAGO 3, ILLINOIS

cilities and the finest products in the world, but if our personnel do not do their job, the merchandise will not move."

In the Bush plan there are three men in each store. One is a manager, and the other two are at the second and third grades. These three do all the duties—there is no secretary. The store managers are paid straight commissions. He is responsible for selling, and managing his helpers and the service program. He also is responsible for inventory and charge accounts. All bookkeeping is done at the home office in Dwight.

Some time ago a system of controlled inventory was established involving all buying and resale merchandise. A buying committee, made up of Mr. Bush and the store managers, passes on all products bought for sale in all stores. This system has cut down on impulse buying by individual store managers, and has allowed all stores to trim their inventory count from 2,500 items to only 700. Duplication of items and brands has been eliminated, and stocks of slow movers have been pruned.

Bush stores do not carry fertilizer. Many manufacturers of fertilizer, says Mr. Bush, run up and down the roads making many farmers dealers, which is merely a device for selling their products wholesale. This method of distribution, he says, does not allow a dealer to mark-up and does not permit room for a service program. Fertilizer manufacturers are not going to develop good dealers this way, concludes Mr. Bush. In his own operations, Mr. Bush says he does not employ resale men to go down the road hitting all farms for a sale. Neither does he pull up to a barn with a truck and ask a farmer what he needs. Rather, he says, he tries, with a long-range service program and feeder education, to get them to come to his store for all their needs.

An $8,500 annual budget goes for advertising. Radio accounts for $1,500, small-town weeklies $1,200, specials, such as calendars, $900, and direct mail accounts for the remainder.

Why was Onarga chosen as the spot for a new Bush store? It is located on Highway 45, south by southwest of Chicago about 100 miles, and is about halfway between Kankakee and Champaign. It is on the Illinois Central Railway.

Picking the Store Location

First, says Mr. Bush, it is in one of his supplier's franchise area. When a new store was considered, he scoured the area talking to his competitors. They mostly were cooperative. After months of checking, he concluded feeders in the Onarga area could use his type of service and advice on how to do a better job. In studying the business prospects, a University of Illinois survey shows that 25 tons of livestock feed are bought annually for each square mile in the area, which is above average for the state. The poultry population is desirable and the ratio of owners to tenants is favorable.

Richard Shapland, who is managing the Onarga store, was put in the territory three months in advance of the opening. Two mailings of the Bush-O-Graph were made in October and February, respectively, and around 5,600 were concentrated in the Onarga area. The Bush-O-Graph is an eight-page newspaper type magazine which Bush has published for 13 years. Eight or ten issues are mailed annually, with each mailing ranging from 12,000 to 18,000 copies. Larger mailings are made during the chick season. The paper contains news of specials, feeding hints and other material presented in a folksy way. One of the most effective readership builders is the classified ad service, which is run free of charge for farmers. Advertisements and information about the products and services the Bush store offers are carried.

On Dec. 5 a single-fold postcard was mailed to 2,300 boxholders in the area. The card listed a questionnaire, inviting farmers to check the style of store wanted, the desired floor level and the store location. This was followed Jan. 10 with a two-fold card, inviting feeders to decide on the type of grand opening they wanted. This enlisted farmers' interest and support.

On the final day, local merchants cooperated with a "dollar day." Two days before the opening a flyer, telling of more than $1,000 in prizes to be given away and other parts of the program, was sent out.

At the grand opening, a counter was installed by the entrance. All visitors were registered, and gave information about their operations, such as size of flock, number of cattle on feed. Their farm was located on a special service card, which was filed. A pin was stuck on a large wall map marking the location of each farm.

Important suppliers for Bush set up booths during the opening, and each registrant was given cards which he deposited at the booths to entitle him to prizes. This caused each booth to be visited by all the feeders. Refreshments were served. On the final evening, representatives of suppliers and Mr. Bush made short, no-sell talks.

The building itself is 35 by 100 ft., and is leased for one year on a trial basis. If the location is suitable, a long-term lease will be arranged. Mr. Bush, looking to the future, says if he finds he can open a store and can make it profitable in a reasonable time, he will look for another outlet.

MOBILE FEED MILL BOUGHT

HARLAND, IOWA—A new mobile feed manufacturing unit was unveiled here recently by the I&K Grain Co. of Harland and Irwin. Lars Hodne owns the company, having recently bought the Feeder's Supply Service in Harland and changed its name to the same as that of his Irwin firm,

ADVERTISING CAPS for . . .
the Most In Publicity and Good Will
Write Us for Samples and Prices
MINNESOTA SPECIALTY CO., INC.
121 N. 4th St., Minneapolis 1, Minn.

NATURAL VITAMIN A ALSO SUPPLIES IMPORTANT "FISH FACTORS"

The use of NATURAL VITAMIN A brings important "FISH FACTORS" into the feeds to which it is added. "These unknown" PLUS FACTORS are not present in synthetic Vitamin A. This fact accounts for the superiority of NATURAL VITAMIN A.

Synthetic Vitamin A starts with several million unit potency per gram and blends down to proper potencies in a neutral carrier. NATURAL VITAMIN A in fish liver oil potency units are present in only thousands of Vitamins A units per gram, and the less potent a fish liver oil is, the better is its reputation, as illustrated by the sequences of Cod, Halibut, Shark and Whale.

No one will deny the superiority of Cod Liver Oil. The Getz article in the August issue of the "American Review of Tuberculosis and Pulmonary Diseases" sky rockets Cod Liver Oil Vitamin A values over synthetic Vitamin A.

Vitinc Vi-A-10, the 10,000 unit per gram NATURAL VITAMIN A DRY STABILIZED PRODUCT is declared by one of the leading laboratories in the U.S.A. as "The best for Vitamin A stability."

Regardless of your requirements, for Vitamin A, concentrates, oils, alcohol, water soluble liquid, or dry forms, it will pay you to look to the world's largest comprehensive producer of NATURAL VITAMIN A.

VITINC TRADE MARK
VITAMINS, INC.
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VITINC QUALITY in BOTH

R-E-Co.
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Ask Us to Quote
Vegetable and Animal Proteins
Millfeeds, Alfalfa Meal, Molasses and other Feed Products
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HERRING Sales
TRADE OF TRADE KANSAS CITY, MO.

Mississippi Reports On Arsonic Acid Trials with Broilers

STATE COLLEGE, MISS. — Mississippi State College poultry researchers recently reported on the results of a series of nine experiments which were conducted to study the effects of an arsonic acid compound in broiler rations.

Comparisons were made of the stimulating effects of the compound when added to diets containing no antibiotics and when added to diets containing "low" and "high" levels of certain antibiotics.

(The arsonic acid used was 3-nitro-4-hydroxyphenylarsonic acid.)

The results indicate that arsonic compounds are capable of stimulating growth and feed efficiency beyond the response produced by antibiotics, said John West in a report in Mississippi Farm Research.

Results reported were obtained in a series of experiments conducted over a two-year period, 1953-55.

"The greatest stimulating effect upon growth and feed efficiency was observed when the arsonic compound was added to the diet containing no antibiotic, the percentage increase being of the order of 8%," the summary of the report said.

"Definite and rather consistent improvements were noted when the compound was added to rations containing 'low' levels of antibiotics; the percentage increases in growth and feed efficiency were of the order of 6% and 4%, respectively.

"The least stimulating effect was observed when the arsonic acid derivative was added to diets containing the 'high' levels of antibiotics, the percentage increase being of the order of 2%."

The report said disappearance and reappearance of the antibiotic response were observed during this series of trials, but there was no concurrent disappearance of the response to the arsonic compound.

We have . . .
Ray Ewing
PERFORMANCE PRE-MIXES
BEFORE THE NAME GOES ON

Distributed in Utah and Southern Idaho by:
Alan Bader
214 24th Street
P. O. Box 267 • Ogden, Utah
Telephone: Ogden 9323

Dr. Herbert E. Silcox

IN NEW POST—Dr. Herbert E. Silcox has been appointed to the new position of technical director of the Merck & Co., Inc., chemical division, it has been announced by William H. McLean, president of the division. As technical director, Dr. Silcox will direct a coordinated scientific group with enlarged facilities for product and formulation development as the basis for increased technical service to the various customer industries. He joined the company as a chemical engineer in 1942 and filled various positions before being named plant engineer and assistant plant manager at the Stonewall plant, Elkton, Va., in 1952. The following year he was named plant manager. Dr. Silcox received his B.S. and M.S. degrees from the University of New Hampshire and his Ph.D. in chemical engineering from the University of Illinois.

NEW STORE OPENED

MABEL, MINN.—Narum's Feed & Supply was recently opened here by Sever Narum, who was formerly employed at the Mabel Feed & Produce. The firm will handle Big Gain products.

Hey, Mr. Dealer!

Barton

Is Continuing to...

- **Impress Your Customers!**
- **Build Stock Salt Sales!**

This Terrific "Give-Away" Ad

Will Soon Be Appearing in This Ever-Growing List of Publications

Newest Addition—
Wallace's Farmer—308,398 Readers.
Plus All These Leading Farm Papers:
The Dakota Farmer—104,316 Readers.
So. Dakota Stock-Grower—4,500 Readers.
The Nebraska Farmer—120,217 Readers.
The Nebraska Cattleman—5,000 Readers.
The Kansas Farmer—114,671 Readers.
The Kansas Stockman—8,500 Readers.
The Farmer-Stockman (Oklahoma)—165,708 Readers.
The New Mexico Stockman—17,662 Readers.
The Colorado Rancher—43,769 Readers.
Western Farm Life—35,000 Readers.
Daily Drovers Telegram—20,091 Readers.
Daily Journal-Stockman—19,937 Readers.

More Customers, Increased Sales, BIGGER & BETTER PROFITS for YOU!

STOCK and SELL

Barton SALT and Mineral Products

Order an ample supply TODAY!

GET "THE MOSTEST FOR THE LEASTEST" WITH MINERAL KNOW-HOW

SEND FOR **FREE BOOKLET**

16 pages of facts and illustrations on Livestock minerals—their uses and functions.

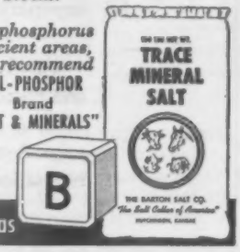
WRITE TODAY
It's yours for the asking! Just send a postcard!

Today, more and more livestock producers are finding the answer to more efficient feeding by supplying their livestock

Barton
***TRACE MINERAL SALT**

Available at feed and farm supply stores in 50 and 100-lb. sacks and 50-lb. blocks.

**In phosphorus deficient areas, we recommend* CAL-PHOSPHOR Brand "SALT & MINERALS"



The BARTON SALT CO., Hutchinson, Kansas

DID YOU READ???

"It is probably wise always to give supplemental vitamin K when antibiotics or sulfonamides are given by mouth."*

And most feeds contain an antibiotic, or sulfonamide!

VITAMIN K (Menadione or Menadione BiSulfite) is another ***Specifide*** FARMACEUTICAL.

Specifide, Inc.
Farmaceuticals for the Feed Trade
3555 Sutherland
P.O. Box 5305 • Indianapolis, Ind.

*References and data furnished on request.

What is a Farm Boy?

Actually, he is many things:

To his mother, he's a worry, a tease and her hope for tomorrow.
To his dog, he's a running, jumping, stick-throwing friend.
To the mice in the barn, he's a constant threat.
To his sister, he's just a boy.
To his teacher, he's a good student—if he's in the mood.
But his 4-H pig sees him as a scrub-brush and daily feed.
The family doctor will tell you this boy grows like a weed.
To the school bus driver, he's a rocking demon.
For the basketball coach, he's a "someday" center.
To the folks from the city, he's a quiet boy.
And to his father, this boy is a big part of all he's worked for.

So you see, everyone sees the farm boy in a different light, and strangely enough, the farm boy is all of these things, but perhaps even more important is not what he is, but what he will be.

The farm boy of today is the farmer of tomorrow.

What this farm boy becomes, America will be. In his hands lies our future, for his job is the most important of all—he will be the man who feeds our nation and provides the raw material for our industry. This farm boy we all know so well may hold a baseball in one hand, but in the other hand is our destiny. He is our tomorrow, this farm boy of today.

This farm boy's parents are working now to make him the man he will have to be. We at Cargill are working for this boy's future, too. Around the clock at Cargill research centers and test farms, highly trained scientists are laboring to find new and easier ways of farming and to find new uses for this boy's crops.

Farm boy of today, grow up knowing this: Cargill is proud to be the number-two man on the farmer-processor team. As we served your grandfather, as we are serving your father, so will we serve you through continued support of our free farm economy, and through constant research designed to make your farming easier, your life a better life. Through such service and research, we have won the reputation as friend and processor to the American Farmer. We shall continue to work to be worthy of your respect, too.

Cargill

90 Years of Creative Processing of Farm Products

CARGILL

For free color reprints, suitable for framing, write Cargill, Inc., 200 Grain Exchange, Minneapolis 15, Minn.

Agricultural Research Department report on new Pfizer Vitamin A Palmitate in Gelatin

Highest

Mineral mixture ingredients
Limestone, dicalcium phosphate, steamed bone meal, iron oxide, magnesium carbonate, manganese sulfate, copper sulfate, cobalt sulfate, zinc carbonate, potassium carbonate.

TEST DATA

TEST MIXTURE: Complete mineral concentrate (ingredients listed on tag on left)

STORAGE TEMPERATURE: 110°F

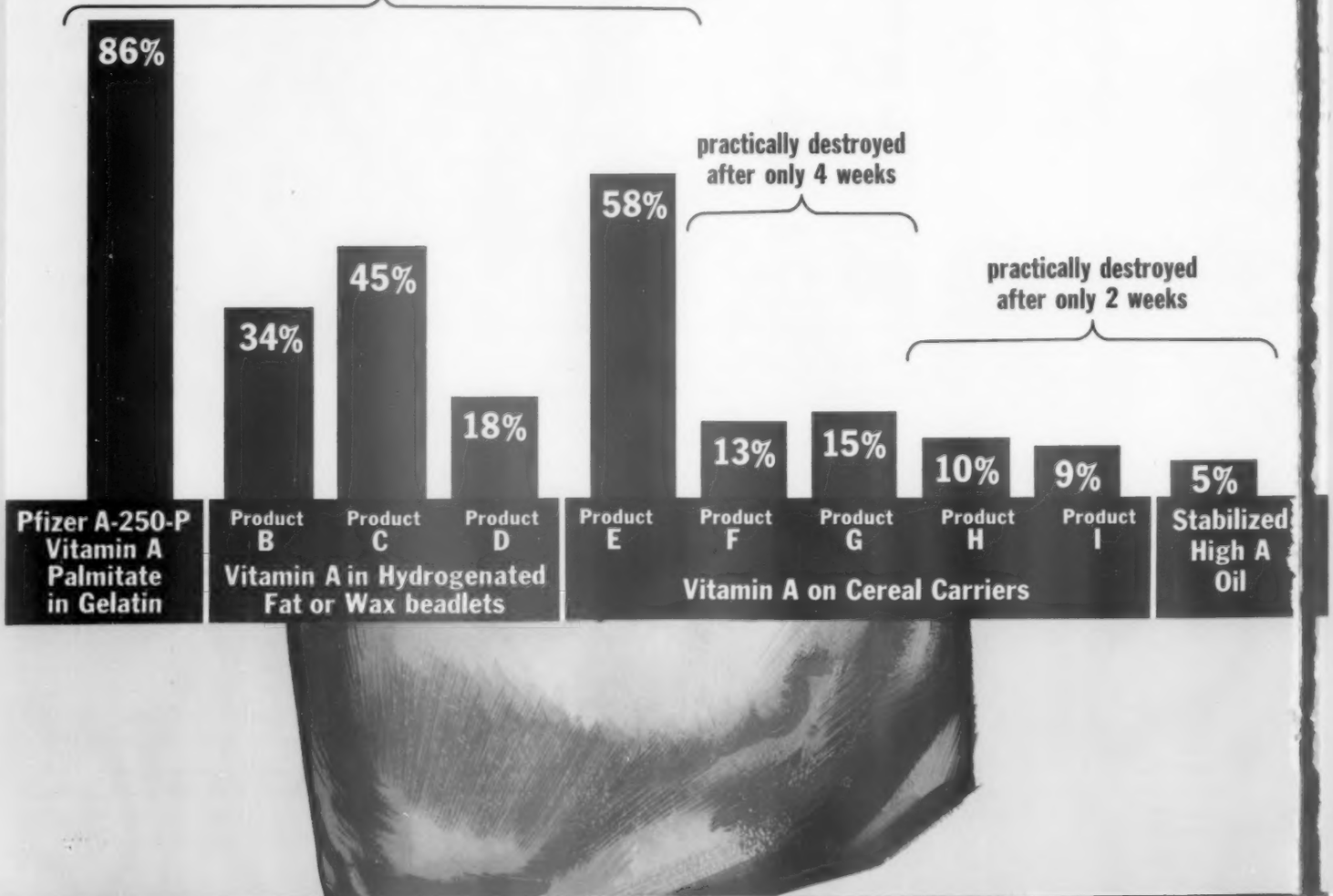
STORAGE PERIOD: 2-8 weeks (see graph)

CONTAINERS: Sealed amber jars

MOISTURE CONTENT: 2.0% average

BLEND POTENCY: 25,000 units/lb.

Potency of Vitamin A in complete mineral concentrate remaining after 8 weeks' storage



Stability in MINERAL MIXES

Your feed containing minerals may retain 86% of its initial Vitamin A content after 8 weeks' storage. Or, it may be 95% destroyed after just two weeks.

This wide difference in stability in mineral mixes is graphically shown in the chart on the facing page. It represents the findings of completely objective tests comparing the stability of Pfizer's new Vitamin A Palmitate in Gelatin with other forms of vitamin A. Since there is no simple 5-minute desk top test that could possibly tell you how any vitamin A would hold up in the actual feed, these tests were conducted under conditions that approximate, as closely as possible, actual commercial feed formulation, manufacturing and storage stresses.

They show that Pfizer's new A stands up in the presence of minerals better than any other product. Along with this outstanding stability it offers a bonus to the user of 20% greater biological availability than fish liver oil sources.

This greater stability in minerals, in pelleted feeds, in high-moisture feeds and under extended storage eliminates the need for costly overfortification. It actually makes Pfizer A-250-P the lowest cost vitamin A you can use.

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Feathermeal Used As Source of Protein for Lambs

ST. PAUL — Feathermeal was found to be a good protein source for lambs in tests at the University of Minnesota's West Central School and Experiment Station at Morris, according to a recent report from researchers at the university.

Last summer at Morris, R. M. Jordan and H. G. Croom fed feathermeal to three lots of native lambs to compare with soybean oil meal. All received a full feed. In addition, Lot 1 got .1 lb. of soybean oil meal per day. Lot 2 received .2 lb. of protein supplement in the form of half ground feathermeal and half soybean meal. Lot 3 received ⅛ lb. soybean meal per day.

The feathermeal had a tankage smell, but the lambs didn't mind, the researchers noted. It didn't lessen their eating, and they made good use of the feathermeal protein. Their rate of gain and feed efficiency were slightly better than for the lambs on the high level of soybean oil meal, which was ⅛ lb. a day, Dr. Jordan said.

Feathermeal-fed lots had a 23% higher average daily gain than lambs fed the .1 lb. of soybean oil meal, and they had a better feed efficiency, the report said.

At the university in St. Paul this winter, 64 lambs were fed in four lots—two lots received feathermeal plus soybean oil meal as their protein, and two lots got soybean meal only. The lambs with feathermeal in their ration gained faster, the researchers said.

At Morris this winter, one group of lambs was fed a protein supplement of half feathermeal and half soybean meal. A second lot received all feathermeal plus ground corn for palatability.

"But, the 'check' lambs gained much faster and were better feed users than either of the feathermeal-fed lots," the university said. "The reason may be the abrupt change from corn, alfalfa hay and soybean meal to corn, wild hay and feathermeal. For two weeks, the lambs ate almost nothing. After two weeks, however, they ate well and gained as well as the check lot. There was no difference in carcass quality of feathermeal-fed lambs."

Dr. Jordan now believes that feathermeal can supply at least 25% of the total protein without hurting lambs' feed efficiency or rate of gain.

G.L.F. FEED STORE BURNS

LAKEWOOD, PA.—A fire that was almost extinguished burst out anew to destroy the G.L.F. Feed Store here. The loss was estimated at between $15,000 and $20,000 for the building and facilities, and at $20,000 for feed and other farm supplies. Russell Furman, district manager, said the loss was fully covered by insurance.

Council Gathering Data to Be Used As Buying Guide

CHICAGO—The Nutrition Council of the American Feed Manufacturers Assn. is currently engaged in the preparation of a booklet which will include information that can be used as a purchasing guide on various ingredients.

The information is being gathered by the council's ingredients committee, which is headed by H. R. Holloran, Poultry Producers of Central California, Petaluma, Cal.

Some of the committee's work was outlined in a recent AFMA report on the proceedings at the council's last meeting.

The information in the booklet, the committee said, will be designed to: (1) Assist purchasing agents in the selection of top quality ingredients, (2) tell suppliers how to make their products more acceptable to the feed industry.

Sub-committees which have been helping compile information include those on specifications, fish meal, brewers' products, distillers' products, cottonseed products, animal protein and dehydrated alfalfa meal.

Animal Protein

It was noted that animal protein specifications proposed by the National Renderers Assn. were discussed at the last meeting, and the ingredients committee accepted the animal protein sub-committee's recommendation on the specifications to be used in a proposed purchasing guide for meat meal and meat and bone meal. Dr. H. R. Kraybill, American Meat Institute, is chairman of the sub-committee.

Following is the proposal:
Crude Protein: As specified.
Crude Fat: As specified.
Crude Fiber: Maximum 3%.

Ash: Not more than 6½ times the phosphorus level.

Moisture: Minimum 5% — maximum 10%.

Total Digestible Matter (1): Minimum 88%.

Screen Test: 100% to pass No. 7 Tyler screen or No. 7 U.S. screen—98% to pass No. 9 Tyler screen or No. 10 U.S. screen.

Color: Preferably golden brown to medium brown.

Odor: Shall have a fresh, meaty, crackling odor.

Uniformity: Product shall be uniform with respect to composition and grind throughout the lot.

Notes: (1) Total digestible matter determined by method of Gehrt, Caldwell and Elmslie, Journal of Agricultural & Food Chemistry, Vol. 3, page 159, February, 1955.

All other assays according to the current edition of the Official and Tentative Methods of Analysis of the Association of Official Agricultural Chemists.

Cornell Tests Show Value of Diazinon

ITHACA, N.Y. — Three seasons of testing in the Ithaca, N.Y., area have shown that diazinon will keep flies under control for at least six to eight weeks in a well kept barn, according to Dr. H. H. Schwardt, professor of entomology, Cornell University.

Diazinon, now accepted for fly control in dairy barns, should not be sprayed while animals are in the barn and directly into mangers and fountains. Feed should not be exposed to the spray either, Dr. Schwardt states.

Diazinon, a phosphate insecticide, should be applied with caution because it is toxic. It should not be used in poultry houses of any kind, Dr. Schwardt adds.

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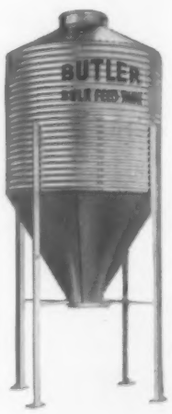

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New Developments on Unidentified Nutrients

By Dr. L. C. Norris and A. B. Morrison
Cornell University

EDITOR'S NOTE: Unidentified growth factors in certain feed ingredients continue to be of great interest to feed men, and extensive efforts are being made by researchers to learn more about the still unidentified nutrients. In the accompanying article, Dr. L. C. Norris and A. B. Morrison of the poultry husbandry department at Cornell University describe developments during the past year. The authors report on various aspects of the subject, including recent research on crude unidentified factor sources, improved procedures for the study of the factors and further work on the unidentified mineral nutrient(s) reported last year. This article is the text of a paper presented by Dr. Norris at the recent Distillers Feed Conference in Cincinnati. Dr. J. R. Couch of Texas A&M College also discussed research on unidentified factors, and his paper will appear in Feedstuffs next week.

* *

During the past year, Morrison, Scott and Norris (1955) and Dannenburg, Reid, Rozacky and Couch (1955) made brief technical reports of results obtained concurrently which showed that the chick requires for maximum growth a mineral or minerals not previously reported to be needed.

Preliminary reports of this finding were made by Norris (1955) and by Couch and associates (1955) at the tenth Distillers Feed Conference. The results of these investigators were subsequently confirmed by Tamimie (1955) of the University of Illinois and by Benton et al (1955a, 1955b) of the University of Wisconsin. Tamimie found that the ash of fish meal stimulated the growth of chicks fed a purified diet adequate in known nutrients and Benton and associates obtained similar response from the ash of gelatin.

Morrison and associates (1955) pointed out that "a portion of the growth response obtained when a mixture of unidentified chick growth factor supplements is fed to chicks is due to a mineral constituent(s) in the mixture." Dannenburg and coworkers (1955) stated that "the ash of distillers dried solubles (DDS) has been found to produce a growth stimulation which is equal to approximately one half that obtained with DDS."

Table 1—Effect of Lipoic Acid on the Growth of Young Chicks

Lipoic acid/ kg. diet	University of Texas* Average gain 12 days	University of Texas* Gain over basal	Cornell University† Average gain 28 days	Cornell University† Gain over basal
mcg.	gm.	%	gm.	%
None	73	...	327	...
+ 10	81	12.5	333	1.2
+ 100	97	34.7	338	3.4
+ 1,000	103	43.1	315	—1.2
+ 10,000	105	45.8	310	—5.2

*Twenty SCWL male chicks per treatment.
†Forty NH x BPR mixed sex chicks per treatment.

The results of these workers showed, therefore, that chicks require an unknown organic growth promoting factor or factors in addition to the unidentified mineral or minerals in the ash of unidentified factor supplements.

It is our purpose in this paper to review evidence on this and other organic factors reported during the past year to be required by the chick, and to present additional information on the unknown mineral nutrient(s) which is necessary for maximum chick growth.

Findings on Lipoic Acid

Recently, DeBusk and Williams (1955) of the University of Texas obtained evidence that a dietary source of lipoic acid, a metabolic essential, is necessary for the growth of young chicks and rats. Their findings were contrary to those previously reported by Stokstad, Broquist and Patterson (1953). At the suggestion of Dr. T. H. Jukes of Lederle Laboratories we attempted to repeat the work of the Texas investigators.

In our work we followed, insofar as possible, the procedures used by the Texas workers. The composition of the diet was identical except that in the first experiment the casein was not alcohol-extracted, and we used New Hampshire x Barred Plymouth Rock mixed sex chicks from hens fed an all-vegetable diet, instead of White Leghorn male chicks. The Texas workers used a single group of chicks for each treatment, whereas we used duplicate lots.

Some of the results of DeBusk and Williams (1955) and those obtained at Cornell University are presented in Table 1. Our findings agree with those previously reported by Stokstad and associates (1953) and disagree with those of DeBusk and Williams. In a second experiment, in which we used casein first purified by repeated washings with a salt-acid solution followed by extraction with alcohol, we confirmed the results of our first experiment.

No cause for the discrepancy in the results is apparent at present. Obviously, at times lipoic acid is an essential nutrient, but it seems in view of the greater quantity of negative results that this is not often the case. Therefore, the importance of lipoic acid in practical nutrition is still unknown. For this reason we

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Table 2—Evidence for a Vitamin E-Active Substance in Brewers Dried Yeast

Treatment	Miller et al* Average wt. 4 weeks gm.	Miller et al* Exud diath %	Scott et al† Average wt. 4 weeks gm.	Scott et al† Exud diath %
Basal diet	226(77)‡	59	234(8)	91
α-Tocopheryl acetate	231(42)	0	326(30)	0
Brewers dried yeast (BDY)	277(96)	0	327(27)	0
Residue hexane extract BDY	.....	..	310(10)	0
Hexane extract BDY	.....	..	260(3)	80
DPPD	.....	..	274(3)	78

*SCWL chicks, alpha-protein diet. †WPR chicks, Torula yeast diet. ‡No. of survivors.

have included a discussion of lipoic acid in this paper on unidentified nutrients.

Vitamin E Active Substance

Miller, Small and Norris (1955) presented evidence that brewers dried yeast is as effective as vitamin E acetate in preventing the development of exudative diathesis, one of the two forms of vitamin E deficiency. The diet fed the chicks contained small quantities of sodium bisulfite, a substance that catalyzes the destruction of vitamin E. The results of these workers confirmed a previous observation by Patrick and Morgan (1943) that brewers dried yeast prevents the development of vitamin E deficiency in the chick. Similar results have also been obtained by Scott et al (1955). Dobson and Scott (1955) have obtained preliminary evidence that distillers dried solubles also contains a vitamin E active substance.

Contrary to the findings of Patrick and Morgan (1943), Scott and associates (1955) were unable to extract the factor preventing exudative diathesis from brewers dried yeast with hexane. As vitamin E is a fat soluble vitamin, this finding confirms the observation of Harris, Quaife and Swanson (1950) that brewers dried yeast contains no vitamin E. Some of the results of Miller and associates and Scott and co-workers showing that brewers dried yeast contains an unidentified vitamin E active substance are presented in Table 2.

The basal diet used by Scott and his co-workers (1955) in their studies on vitamin E contained approximately 60% torula yeast. Chicks fed this diet grow slowly, chick livability is exceedingly poor, and the incidence of exudative diathesis is apprroximately 80 to 90%. When the diet is supplemented with alpha-tocopheryl acetate, growth is approximately normal and none of the chicks develop vitamin E deficiency.

On the other hand, DPPD and several other antioxidants, tested in the experimental work, had no effect in preventing exudative diathesis. These findings indicated that the unknown substance in hexane-extracted yeast is not an antioxidant, but rather functions directly as a substitute for vitamin E. Whether or not this unknown factor is identical with Factor 3 of Schwartz (1951) remains to be determined.

Research on Crude Sources

A number of reports appeared during the year in which the results of studies of crude sources of unidentified growth factors were presented. Petersen, Wiese and Pappenhagen (1955) obtained further evidence of the value of using a purified diet in studying unidentified chick growth factors. Herring fish meal, sardine fish solubles, delactosed dried whey product, Biopar-C and defatted liver residue were found to promote increased growth in chicks fed the

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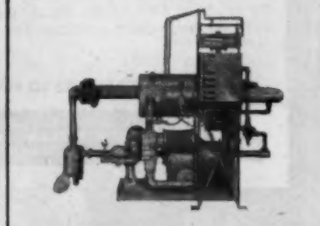

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purified basal diet. Combinations of two or more of these products did not promote a further increase in growth. This finding was believed to indicate that each of the products supplied the same factor or factors deficient in the basal diet.

March, Biely and Touchburn (1955) also made use of a purified diet in studying the value of herring meal, dehydrated cereal grass and dehydrated alfalfa meal as sources of unidentified factors. They concluded that the growth factors present in dehydrated green feed and in herring meal are not identical.

Graded levels of the crude sources of unidentified factors, however, were not fed, thus their evidence for an additive effect when herring meal and dehydrated forages were combined may have been due to supplying an insufficient quantity of each of the products.

Evidence was also obtained in this work that the factor in dehydrated green forage was carried over from the dam to the chick. An improvement in their experimental procedure, therefore, was obtained by using depleted chicks from dams fed rations containing no dehydrated forage.

Further evidence on unidentified growth factors was presented by Camp et al (1955) and Atkinson, Ferguson and Couch (1955). Simplified all-vegetable diets were used in the investigations. The results presented in the first paper suggested the presence of one or more unidentified chick growth factors in dried whey products, fish solubles and antibiotic fermentation residues. The increased weight obtained in the chicks was highly significant.

Dried Whey Factor Said Different

These research workers concluded that dried whey product contains a factor not identical with the one present in fish solubles and the antibiotic fermentation product. Evidence for the existence of these different factors was based on the fact that a significant increase in growth was obtained by a combination of sources of these factors. This conclusion, however, does not appear to be entirely justified, since no evidence was presented in the paper that maximum response was obtained from single sources of the factors in the amounts fed in the investigation.

Table 3—The Value of the Rat in Unidentified Factor Studies

Treatment	Average 4-week gain—gm. Expt. 1	Expt. 2	Expt. 3	Expt. 4
Basal	38	27.5	42	32
+ 6.9 mcg. vit. B_{12}/kg	66.7	...	...	...
+ 13.8 mcg. vit. B_{12}/kg	72.3	47.6	67	73
+ 27.6 mcg. vit. B_{12}/kg	74.0	50.0	...	...
+ 3% fish solubles	103.0	113.0	107	118
+ 13.8 mcg. vit. B_{12} + 5% liver	...	108.0	...	...
+ 13.8 mcg. vit. B_{12} + 2% liver extract	...	115.0	...	...
+ 13.8 mcg. vit. B_{12} + 4% dried whey	...	106.0	...	...
+ Vitamin supplement	...	...	...	73

In the second report, evidence was presented that dried whey product, brewers dried yeast and condensed fish solubles contain unidentified growth factors required by the turkey poult. Although graded levels of these products were fed in the experimental work, only in the case of dried yeast did the results indicate that a sufficient quantity of the product had been fed to promote maximum response. As a consequence, the authors pointed out that the evidence of an additive effect obtained when the products were combined failed to indicate the existence of more than one unidentified growth factor.

In addition to the results of Camp and associates (1955) showing that an antibiotic fermentation residue contained an unidentified chick growth factor, evidence was also reported by Schaefer et al (1955) that the residues resulting from the production of penicillin and Streptomycin contained unidentified chick growth factors.

In this work further evidence was also obtained that distillers dried solubles contained an unidentified growth factor. The diet used in the investigation was an all-vegetable basal supplemented with required minerals and known vitamins.

No attempt was made in this work to differentiate between the growth promoting factor in the fermentation residues and the factor in distillers dried solubles. The results on Streptomycin mycelium meal and penicillin mycelium meal confirmed earlier reports by Bruins, Lapidus, Strong and Cravens (1953) and Edwards, Dam, Norris and Heuser (1953).

Value of Research

It is apparent from a review of these reports that little that was not previously known was revealed as a consequence of the experimental work presented in them. With possibly one exception, all of the sources of unidentified growth factors that were studied have been previously reported to contain factors not identical with any known nutrient.

In spite of this, we believe the results presented in the papers are of real value since they continue to emphasize the needs by poultry for growth factors which have not yet been identified. This is particularly important in formulating poultry rations since animal nutritionists, because of high costs, are constantly exposed to pressure to reduce the quantity of unidentified factor sources to amounts which may not provide adequate margins of safety under all conditions.

At the present time the chick is the experimental animal of choice in most laboratories for conducting experimental work on unidentified growth factors. In the future, however, it may be desirable to use an experimental animal requiring much smaller quantities of materials. This applies particularly to fractionation procedures in differentiation work where it may not be possible to get sufficient quantities of needed fractions to feed the required number of chicks.

In that event, research workers may find a report by Sherman, Schilt and Schaefer (1955) of special interest. These workers obtained evidence of unidentified growth factors required by the rat by making use of the young of breeders fed an all-vegetable ration.

The ration fed the young rats was also an all-vegetable ration but of somewhat simpler composition. The grower ration was supplemented with vitamins A and D_3 and choline. All the other vitamins were found to be present in adequate amounts by the failure to obtain improved growth on supplementing the diet with all the known vitamins except vitamins A and D_3.

The more pertinent results of Sherman et al (1955) are presented in

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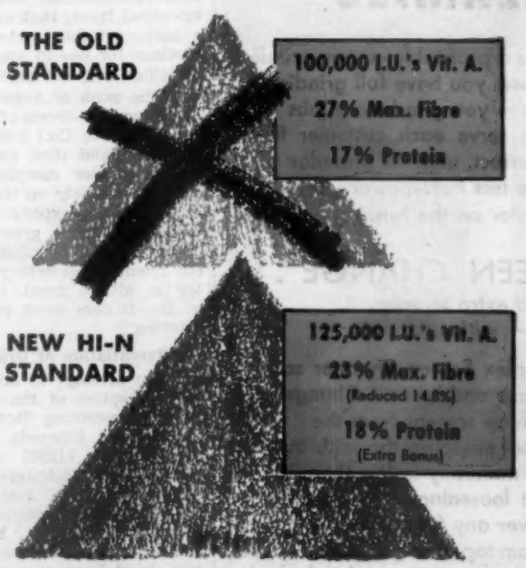

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Table 3. The results of the work showed that fish meal, whole liver, liver extract and dried whey contain unidentified growth factors required by the rat. No improvement in growth was obtained with lyxoflavin, a close relative of riboflavin, and that obtained with orotic acid was of doubtful significance.

Application of Improved Procedures

Although the use of a purified diet in studying unidentified chick growth factors appears in general to be necessary, it still represents a compromise, since we cannot be sure that the purified proteins used in the diet are entirely free of these factors. Because of this, pure amino acids have been used recently by Benton et al (1955a, 1955b) in studying unidentified growth factors required by the chick. Some of the results of these studies are given in Table 4.

The results of this work showed that alcohol-washed casein, gelatin, zein and fibrin contain unidentified growth factors. Gelatin was found to be the best source when fed in appropriate amounts, and the acid hydrolysate of gelatin was as active as a comparable amount of intact gelatin. An alkaline hydrolysate of gelatin was not as active as the acid hydrolysate. It appeared unlikely that the growth effect was due to a peptide, since the acid treatment would hydrolyze most of the peptides in gelatin.

Table 4—Effect of Gelatin on Chick Growth

Treatment	Average gain in 13 days—gm. Expt. 1*	Expt. 2†	Expt. 3*
Basal	54.6(7)‡	58.5(7)	37.7(7)
+ 5% gelatin	84.5(7)	94.9(6)	76.7(7)
+ HCl hydrolysate of gelatin	.....	.....	79.3(6)
+ $Ba(OH)_2$ hydrolysate of gelatin	.....	.....	53.3(7)
18% casein and 10% gelatin	.....	100.1(7)	.....

*Mixed sex NH x SCWL chicks. †Mixed sex NH chicks. ‡Number of survivors.

Table 5—Effect of Cerelose and Sucrose on Chick Growth Response to Unidentified Factors

Treatment	Cerelose Survivors	Cerelose Average wt. 4 weeks gm.	Sucrose Survivors	Sucrose Average wt. 4 weeks gm.
None	58	280b	77	230a
+ 2% liver fraction	55	302	59	298c
+ 4% fish solubles	54	310	59	289d

b, c, d significant at 5% level over a.

In later work Benton and associates (1955b) showed that half of the growth activity of the gelatin was due to the ash contained in it. It appeared therefore that gelatin contains two unidentified growth factors required by the chick, one present in the gelatin ash and the other in the intact gelatin, the latter being presumably an organic factor.

Attempts to improve the procedures used for studying unidentified growth factors have also been reported by Arscott and Combs (1955). These investigators used diets containing isolated soybean protein and purified ingredients, as well as a simplified diet in which the protein was supplied by means of solvent-process soybean oil meal.

The use of iodinated casein as a means of increasing the difference between the response of the chicks fed the basal diet and the diet supplemented with unidentified growth factors proved to be of no value. The average difference in weight between the chicks fed the basal diets with and without iodinated casein in four experiments was not significant.

On the other hand, in five experiments, the use of cane sugar in place of cerelose proved to be significant at the 5% level. The results of the experimental work on these carbohydrates are presented in Table 5.

Sucrose Used

In unpublished work conducted at our laboratory, we also have found the use of iodinated casein to be of no value in research work on unidentified chick growth factors, and in our work on the unidentified mineral nutrients required by the chick, substitution of sucrose for cerelose has not proven to be of any advantage.

It is possible, however, in view of the difference in effects of these carbohydrates on the microflora of the intestinal tract, that sucrose may be a more suitable carbohydrate than cerelose for use in studying the unidentified organic growth factors.

In the work of Arscott and Combs (1955) graded levels of liver fraction 2 (Armour & Co.) and alfalfa meal were fed, and their growth promoting properties compared with fish solubles. Largely on the basis of the results of one experiment, they concluded that the growth promoting factor in liver fraction 2 was different from the growth promoting factor in alfalfa meal, but that both of the factors were present in fish solubles.

Differentiation of Growth Factors

In an attempt to arrive at a better conception of the nature of the growth promoting factor present in dried liver, Edwards, Chin, Norris and Heuser (1955) made use of Craig's (1944) counter-current distribution procedure, a system of fractionation which separates substances of different solubility by distribution in the upper and lower layers of a two liquid layer system.

In this instance, the upper layer was composed of a mixture of phenol and n-butanol and the lower layer

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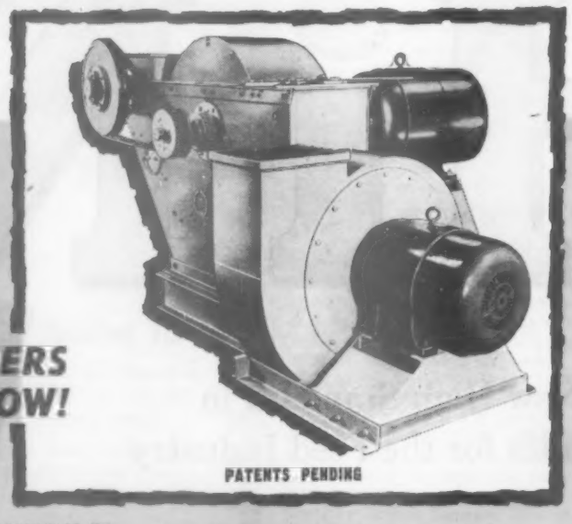

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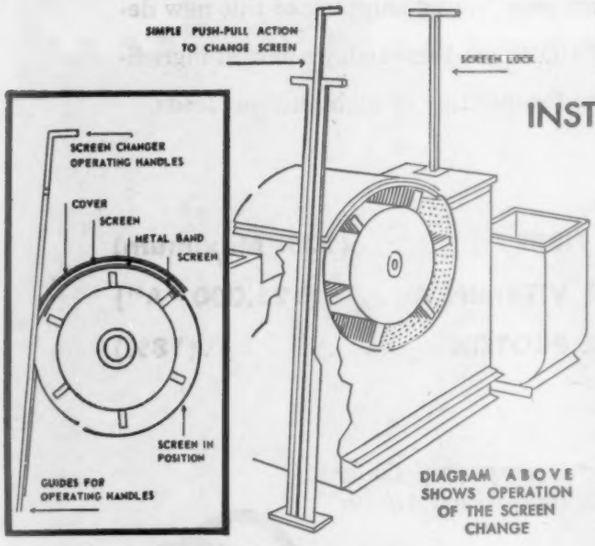

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Table 6—Separation of Two Factors in Liver Extract

Fraction	Factor solubility	Average wt. 33 days gm.	Increase over basal %
None	.....	268(35)	...
2, 3, 4	Phenol-butanol*	336(116)	25 0
7	.....	271(39)	1.1
8, 9	Water†	316(76)	17.9

*Organic. †Probably inorganic.

was distilled water at pH 2.5 in equilibrium with the upper layer.

Liver extract (Wilson & Co.) which had already been subjected to considerable purification was fractionated into nine portions by means of the counter-current distribution system. When these fractions were given in a purified diet to chicks it was found that two growth promoting substances had been separated by the procedure. One factor was 74% soluble in the phenol-n-butanol layer and the other 98% soluble in the water layer. The latter contained the mineral constituents of the liver extract.

It appeared therefore that one of the factors was organic in nature and the other probably inorganic. The combined results of two experiments are given in Table 6. Whether or not the organic factor is identical with the liver factor of Arscott and Combs (1955) cannot be determined.

Liver Protein Tried

A purified diet containing purified casein supplemented with l-arginine hydrochloride and DL-methionine was used in the fractionation studies. The adequacy of the purified diet was ascertained by doubling all the known vitamins, doubling the trace elements, copper, iodine, iron, zinc and cobalt with traces of molybdenum and fluorine, and increasing the arginine and tryptophane content of the diet so that the total quantities of these amino acids were equivalent to the amounts present in the diet when supplemented with 7.5% defatted dried liver.

None of the other essential amino acids were raised by including liver protein in the diet in place of an equivalent amount of casein protein. Chick growth was not significantly increased by any of these treatments.

The relative value of dried liver and fish solubles as sources of unidentified chick growth factors was studied at the time the adequacy of the purified diet in known nutrients was ascertained. The maximum response from the dried liver and fish solubles was determined by feeding graded levels. The results are presented in Table 7.

The responses from both the liver and the fish solubles were markedly greater than that obtained with the basal diet and appeared to be the maximum possible from the materials. When the defatted liver and fish solubles were combined, a still further increase in growth was obtained.

It appeared, therefore, that the liver factors were not identical with the fish soluble factor and that the supply of fish solubles used in this work did not contain the liver factor of Arscott and Combs (1955). Because of this, evidence of the existence of three unidentified growth factors was obtained in this investigation.

Costs Are High

The reports dealing with improved procedures which we have just discussed, offer promise that eventually

(Continued on page 61)

Table 7—Differentiation Between the Unidentified Growth Factors in Dried Liver and Fish Solubles

Treatment	Sur-vivors	Aver. weight 4 wks. gm.	Incr. over basal %
None	123	283	...
+ 5% dried liver (DL)	55	345	21.9
+ 7.5% dried liver	53	338	19.4
+ 3% fish solubles (FS)	40	333	17.7
+ 4.5% fish solubles	15	348	23.0
+ 5% DL + 3% FS	54	383	35.3
+ 7.5% DL + 4.5% FS	17	371	31.0

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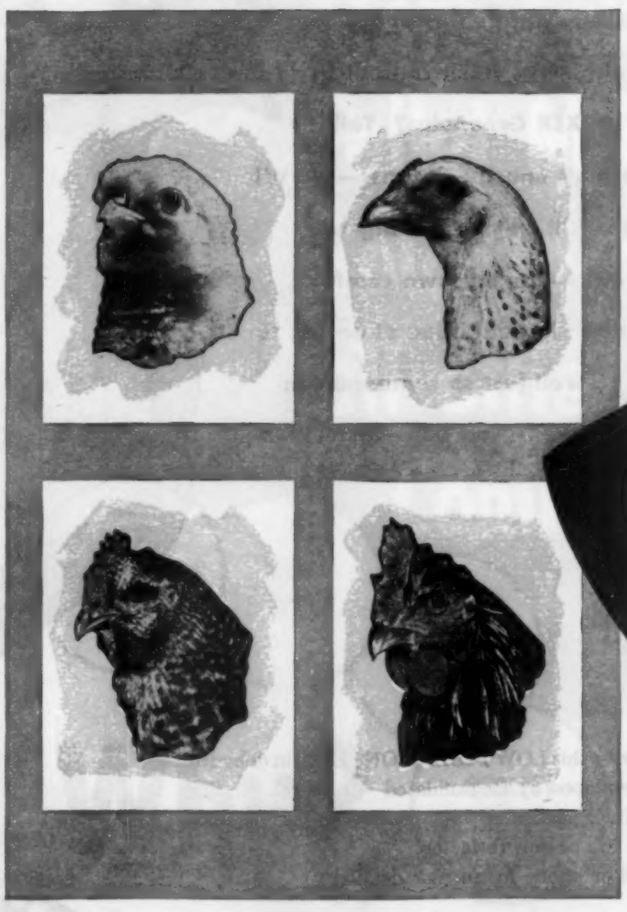

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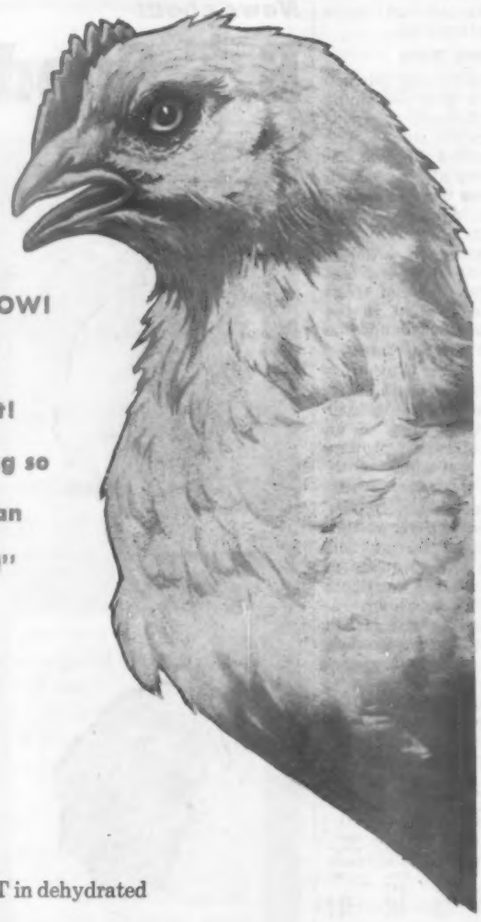

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Auburn Announces Two Vaccines for Coccidiosis Protection

AUBURN, ALA.—Two vaccines for protection against coccidiosis, one for broilers and another for laying stock, have been developed by the Alabama Polytechnic Institute, according to an announcement by Dr. E. V. Smith, director.

The two vaccines are improvements over the earlier Auburn-developed inoculum, Dr. Smith said.

"The first to be released was in 1952, which protected chickens against the cecal type coccidia," the announcement said. "About a year ago, an improved vaccine was produced that provided added protection against three types of intestinal coccidia. Now comes a further improvement—two separate vaccines, each of which provides protection according to specific needs.

"The vaccine for broilers protects against the cecal type and two intestinal types of coccidia. Two of these three affect weight gains, particularly in the late growing period of broilers. Severe outbreaks caused by either coccidia will retard growth ¼ to ½ lb. The broiler type vaccine will cost growers about 7/10 of 1¢ per bird.

"The vaccine for laying stock gives immunity to five species of coccidia—cecal and four intestinal types. One of these damages the mid and lower intestine usually after chicks are 12 weeks old and often about the same time pullets begin to lay. The cost of this vaccine is 1¢ or a little less per bird, depending on number treated."

Use of the new vaccines follows the same procedures as the earlier inoculum. It is given in the feed of three-day-old chicks. Thirteen days later, a mild treatment of sulfaquinoxaline is given in the drinking water. Within 28 days the chicks develop enough immunity to protect them against natural exposure, Dr. Smith said.

"Field trials in Alabama and Georgia of both types of vaccines, involving thousands of birds, resulted in losses of less than ½%," the announcement said. "The vaccine did not affect the feed conversion ratio.

"The two improved vaccines were additional results from the research of Dr. S. A. Edgar, poultry pathologist, and his associates in the poultry husbandry department.

"Permits for sale of the vaccines have been granted by the U.S. Pure Food and Drug Administration. The vaccines have been released through the Auburn Research Foundation to two pharmaceutical companies."

Manitoba to Get Third Alfalfa Dehydrator

WINNIPEG — Manitoba will have at least three alfalfa dehydrating plants in operation in 1956 if present plans for all three are finalized. The latest will be constructed some 50 miles east and slightly north of Winnipeg at Lac du Bonnet by A. R. McIntosh. Construction of the plant will begin as soon as the frost is out of the ground and it will be in operation by the end of May.

It will be constructed on a 1,250 acre site on the outskirts of Lac du Bonnet and the acreage is expected to supply all of the alfalfa required. Mr. McIntosh is owner of the acreage.

Jean Renault Visits K. C. Feed Interests

KANSAS CITY—Jean Renault, son of the late Louis Renault, famous French industrialist and automobile manufacturer, visited feed interests in Kansas City recently. Mr. Renault consulted with Joseph Chrisman, executive vice president, American Dehydrators Assn.

A member of the dehydrators' group, Mr. Renault previously attended the convention of the organization at Coronado, Cal., in January and later toured some California dehydrating plants. In the Kansas City area he saw the plants of National Alfalfa Dehydrating & Milling Co. at nearby Midland, Kansas, the Staley Milling Co. and the Columbian Steel Tank Co.

Mr. Renault operates some 4,000 acres of family farm lands in Normandy and operates a dehydrating plant for alfalfa and potatoes.

FRED A. SNYDER DIES

MEDINA, OHIO—Fred A. Snyder, 72, treasurer of the Medina Farmers' Exchange Co., died recently after 49 active years in the feed business. He started in Lodi, Ohio, as a bookkeeper and a year later moved to Medina as manager of the Farmers' Exchange Co.

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	50 grams
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(1.5 milligrams if disease is observed)	50 grams
0.1 to 0.2 milligrams every day	10 grams

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(Continued from page 55)

a solution of the problem of unidentified growth factors will be attained. Adoption of the major developments which have been made, however, will greatly increase experimental costs. Preparation and fractionation of extracts of unidentified factors require highly skilled technicians and expensive equipment and the work involved is time-consuming.

Purified diets are also expensive and the need to use graded levels and combinations of potent fractions, in order to differentiate between different factors, increases the quantity of purified diet needed in the experimental work. The use of pure amino acids in place of purified proteins may be desirable in some instances but appears at present to be impossible for the most part because of high cost.

In the work of Edwards and associates (1955) use was made of a purified diet containing purified casein, a protein which is deficient in arginine. To remedy this deficiency, the diet was supplemented with arginine.

Because arginine is so expensive, we made a study of the possibility of replacing the casein with arginine-rich isolated soybean protein. We found under our conditions that by washing the protein at pH 4.6 repeatedly with tap water, the growth promoting properties of the protein were sufficiently reduced so that the substitution could be made.

The purification procedure also decreased the mineral content of the protein. The composition of the purified diets containing either purified casein or purified isolated soybean protein which we are now using in our research work on unidentified growth factors is given in Table 8.

Table 8—Composition of Purified Diets

Ingredient	Casein %	Isolated soybean protein %
Cerelose	63.52	61.40
Casein, purified	22.38	....
Isolated soybean protein,* purified	....	25.47
Cellulose (Solka-Floc)	3.00	3.00
Hydrogenated fat	3.00	3.00
Choline chloride	0.22	0.22
DL-methionine	0.30	0.30
l-Arginine HCl	0.30	....
Glycine	0.30	0.30
Vitamin mixture†	0.575	0.575
Mineral mixture‡	5.43	5.43

*Drackett Assay Protein C-1.

†When added to the diet at the 0.575% level, this vitamin mixture supplies the following per 100 gm. of diet: thiamine HCl, 1.0 mg.; riboflavin, 1.0 mg.; niacin, 5.0 mg.; calcium pantothenate, 2.0 mg.; pyridoxine HCl, 0.45 mg.; biotin, 0.02 mg.; folic acid, 0.40 mg.; menadione, 0.05 mg.; inositol, 25.0 mg.; a-tocopheryl acetate, 2.0 mg.; vitamin B_{12}, 2.0 mcg.; vitamin A, 500 I. U.; vitamin D, 37.5 I. C. U.

‡When added to the diet at the 5.43% level, this mineral mixture, composed of Analytical Reagent grade chemicals, supplies the following in per cent or mg/kg of diet: calcium, 1.23%; cobalt, 0.421 mg.; copper, 4.25 mg.; iodine, 3.0 mg.; iron, 67.0 mg.; manganese, 108.2 mg.; magnesium, 516 mg.; molybdenum, 2.29 mg.; phosphorus, 0.69%; potassium, 0.25%; sodium, 0.24%; zinc, 4.80 mg.

Much to our surprise on studying the ash, it proved to be growth promoting. Our original observations have been confirmed in repeated experiments. In all but the early experiments reagent grade chemicals have been used in the mineral mixture in the diets and the chicks have been supplied either distilled or demineralized water to drink.

32 Minerals Studied

Proceeding on the hypothesis that we were dealing with unknown mineral nutrients, we have studied, during the past year, 32 different mineral elements alone and in various combinations, without obtaining any growth response. Because of these negative findings, we have also made studies based on the hypothesis that the improved growth obtained with the ash of unidentified factor supplements is caused by a better balance of the mineral elements known to be needed in nutrition.

We have increased the calcium, magnesium, sodium, potassium, phosphorus, sulfur and chlorine contents of the diet either alone or in combinations, without obtaining any significant increase in growth. We have made similar studies with the trace elements known to be needed, also with negative results.

Hemoglobin levels in our chicks fed the basal diet only have been normal and approximately the same as the hemoglobin levels of chicks fed

Further Work on Mineral Nutrients

Following the development of the purified diet containing isolated soybean protein, studies were conducted to determine if it was adequate in necessary minerals, identified vitamins and essential amino acids. From the results of the study it appeared that the diet was complete in known nutrients but, in order to be sure, further work was considered on the essential trace elements.

This, however, appeared unnecessary provided the ash of the mixture of unidentified factor supplements, which we had been supplying as a positive control, failed to promote an increase in growth when included in the basal diet.

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the basal diet supplemented with ash of unidentified factor supplements. These results provided further evidence that the diet was adequate in iron and copper.

30 Experiments Conducted

Mr. Morrison of our laboratory, who is in direct charge of our experimental work on the unknown mineral, has conducted 30 experiments since our original one in which comparisons can be made between the growth response obtained with the basal diet and that obtained with the diet supplemented with ash.

In six of the experiments we obtained responses from the ash which we believe not to be significant. In spite of this, when we made a statistical study of all experiments to determine the significance of the increased response obtained from the ash, we found that the increased response was highly significant ($P<0.01$). The average growth increase in all 30 experiments amounted to 13.8%.

We have found that supplying the ash also resulted in an improvement in feed efficiency. The results of a statistical study showed that the improvement was significant ($P<0.02$), in spite of the fact that the increased gain per gram of feed amounted to only 0.033 gm. The results on growth and gain per gram of feed are presented in Table 9.

Nutrient(s) for Bone Formation

In our work, chicks of hens fed an all-vegetable diet frequently developed enlarged hocks when fed the basal diet without ash. The occurrence of slipped tendon, however, has been rare. Recently, we have made studies on the bone ash, breaking strength and length of the tibiae of chicks paired as to weight from the basal diet and the diet supplemented with the ash. Although the chick supplied the ash had slightly longer tibiae, the difference proved not to be statistically significant ($P<0.2$).

On the other hand, the difference in bone ash content of the fat-free dry tibiae proved to be highly significant ($P=0.01$). The breaking strength of the tibiae was also greater in the chicks which received the ash, but the difference in the breaking strength was not statistically significant at the 5% level ($P<0.1$).

In view of the correlation between breaking strength and bone ash, however, we consider that the results on breaking strength are significant.

These findings are similar to those reported by Caskey, Gallup and Norris (1939) on the effect of manganese deficiency on bone development in the chick. An increase in the manganese content of the basal diet, however, has not prevented the development of malformation of the bones of the chicks, nor has it improved growth.

In spite of all our efforts of the past year, we have not been able to identify the mineral or minerals in unidentified factor supplements which increase the growth of chicks fed purified diets adequate in the known essential minerals.

We also have not been able to obtain any evidence that the problem is one of mineral imbalance, but we do not consider that we have entirely ruled out this possibility. Many more minerals remain to be studied in addition to the 32 from which we have obtained no response. We hope to complete work on these minerals within the near future.

If the results of these studies also prove to be negative, then it appears probable that the observed effects obtained from the ash are due to a particular combination of unknown mineral elements or that the requirement is not for mineral elements as such but perhaps for complex mineral ions.

In the meantime it is necessary to use crude sources of unidentified growth factors in composing practical rations for chicks and breeders in order to be sure of supplying a sufficient quantity of the unidentified mineral nutrients. It is also necessary to include these materials in practical rations in order to make them adequate in the organic growth promoting factor or factors required by the chick.

Materials which have been reported to be sources of unidentified growth factors, including those mentioned in this paper, are fish meal, fish solubles, dried milk products dried whey products, dried liver, alfalfa meal, forage juice, distillers dried solubles and other fermentation products. All of them have been found generally but not invariably to be of value when included in practical rations.

The responses obtained in chicks fed practical rations, however, are usually not as great as when purified diets are supplied. Some of the results we have obtained by feeding sources of unidentified growth factors in purified diets to chicks are given in Table 10. The results were compiled from the data of two or more representative experiments containing, for the most part, comparable groups of chicks.

The growth responses obtained with the unidentified factor sources varied from 10 to 28%. Growth responses as great as these are, in our opinion, highly significant. Since the purified diets used in the experimental work have been proven to be adequate in known vitamins, and adequate also insofar as we have been able to determine in essential amino acids and essential minerals, the growth responses provide, we believe, adequate evidence of the need of chicks for unidentified growth factors.

The results do not show, however, that forage juice, dried whey product and distillers dried solubles are better sources of unidentified growth factors than fish solubles and dried liver, since they were not obtained in comparable experiments. Instead they were obtained in different experiments conducted over a period of several years, with chicks from different hatches fed different types of

Table 9—Responses From the Ash of a Mixture of Unidentified Factor Sources and of Distillers Dried Solubles

	Basal diet	Basal diet + ash
Number of surviving chicks	979	832
Average 4-week weight, gm.*	311	354
Aver. increase, %		13.8
Significance, P		<0.01
Average gain per gram feed, gm.†	0.526	0.559
Aver. increase, %		6.3
Significance, P		<0.03

*Average of 30 experiments.
†Average of 29 experiments.

Table 10—Responses of Chicks Fed Purified Diets to Sources of Unidentified Factors*

Treatment	Survivors	Aver. weight 4 wks. gm.	Incr. over basal %
Basal	123	283	...
+ fish solubles	55	337	19.1
Basal	123	283	...
+ dried liver	108	342	20.8
Basal	59	313	...
+ forage juice	130	392	25.6
Basal	43	265	...
+ dried whey product	47	334	26.0
Basal	222	294	...
+ distillers dried sol.	208	367	28.2

*These results are from experiments which are not comparable as to type of purified diet, source of chicks and season of the year, and thus do not provide evidence of difference in value as sources of the unidentified factors.

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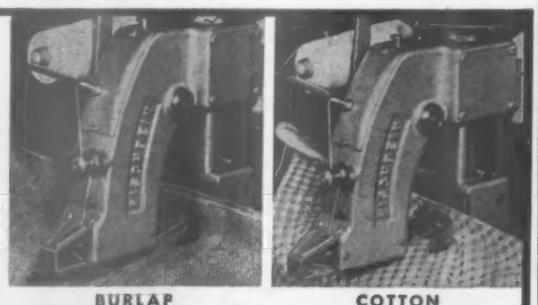

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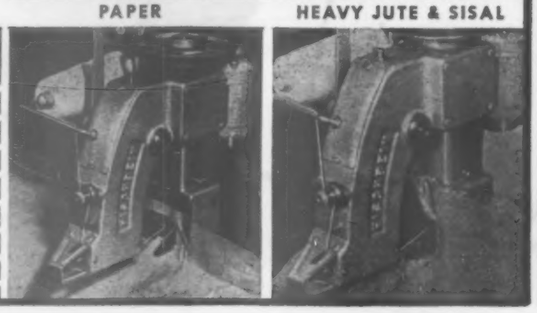

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purified diets. Thus, the increased growth responses observed over those of the basal lots of chicks may be due to differences in the quality of the chicks used in the experimental work and to seasonal variation in environmental conditions which we were not able to control.

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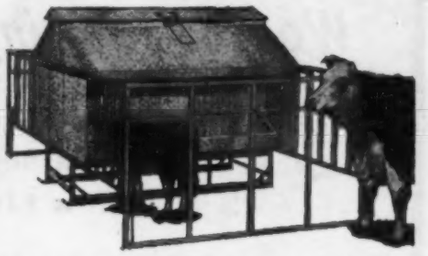

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No. 5407—Pallet repair manual, $1, Office of Technical Services, U.S. Department of Commerce, Washington 25, D. C.

No. 5408 — Feed analysis table, Nopco Chemical Co.

No. 5409—Grain sanitation booklet, Douglas Chemical Co.

No. 5410 — Conveyor brochure, Seedburo Equipment Co.

PREFERRED STOCK CALLED IN

NEW YORK—American Cyanamid Co. has announced that its outstanding cumulative preferred stock, Series B (approximately 25,000 shares) have been called for redemption on May 4, 1956. In the meantime, up to the close of business on May 2, 1956, holders of preferred stock, Series B, have the right to convert such shares into common stock on the basis of approximately 2.78 shares of common for a share of preferred.

Send me information on the items marked:

- ☐ No. 5411—Health Products Booklet
- ☐ No. 5413—Rumen Product
- ☐ No. 5414—Feeder Booklet
- ☐ No. 5415—Grain Sanitation Movie

Others (list numbers) .....

NAME .....

COMPANY .....

ADDRESS .....

—CLIP OUT—FOLD OVER ON THIS LINE—FASTEN (STAPLE, TAPE, GLUE)—MAIL—

FIRST CLASS PERMIT No. 2
(Sec. 34.9, P. L. & R.)
MINNEAPOLIS, MINN.

BUSINESS REPLY ENVELOPE
No postage stamp necessary if mailed in the United States

POSTAGE WILL BE PAID BY—

Feedstuffs

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Reader Service Dept. Minneapolis 1, Minn.

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Smells good!
Tastes good!
Sells good!

LOW IN COST
write
FLAVOR CORPORATION OF AMERICA
3037 N. CLARK ST., CHICAGO 14, ILL.

Supplementary Feeding Of Range Sheep Pays Off, Say Utah Workers

LOGAN, UTAH — Supplementary feeding of range sheep pays big dividends, according to a survey made at the Utah Agricultural College Experiment Station here. It's money-in-the-pocket for range sheepmen to supplement feed during winter grazing months, the Utah specialists say.

"Feed raised the average lamb crop more than 10%, and grease wool production was increased about 7 lb. or ewe. For example, the additional net income for 1,000 ewes was slightly more than $1,200," the survey report states. It continues:

"During the winters of the tests, ewes of each of six age groups including lambs to ewes over six years old, or a total of 162 ewes, were assigned by chance to 27 treatments. These treatments consisted of three levels of three supplementary feeds in all combinations: barley for energy, monosodium phosphate for phosphorus, and soybean oil meal for protein.

"The supplements were fed every other morning to ewes individually during the period they were grazing on the winter range. The three levels of barley or soybean oil meal fed were 0, 0.28 and 0.56 lb., and the three levels of monosodium phosphate were 0, 0.46 and 0.60 oz.

"In addition to the ewes fed in the treatments described above, 36 other ewes, six of each age class, received only range forage.

"The sheep fed supplements maintained their weight throughout the winter better than did the ewes receiving only range forage. Increasing amounts of barley and soybean oil meal prevented excessive weight losses, but in each case the larger amount of supplement did not produce significantly better results than the smaller amount.

"The clean weight of the wool produced by the ewes that were fed supplements averaged 3.7 lb., compared to 3.41 lb. for sheep receiving only range forage. Monosodium phosphate fed at the rate of 0.46 oz., plus soybean oil meal at the rate of 0.28 lb. resulted in the largest increase in clean wool production. This combination of supplements produced 3.96 lb. of clean wool while the sheep receiving range forage produced only 3.41 lb.

"These facts show that phosphorus and protein should be fed in the correct ratios and amounts to produce the maximum amount of wool," the report states.

"The condition of the sheep, the amount and kind of forage on the range, climatic conditions, and the time of year will determine when and what kind of supplements should be fed. Usually alfalfa hay, dehydrated alfalfa pellets, barley, cottonseed meal and bone meal, or other safe phosphorus supplements are the cheapest feeds," the report concludes.

Plans Made for Social Activities During California Convention

SACRAMENTO, CAL. — Reservations are now being accepted for various social and sports events to be held in connection with the 32nd annual convention of the California Hay, Grain & Feed Dealers Assn at Hotel Ambassador, Los Angeles.

North will compete against South in a bowling tournament at Sunset Bowl. Vern Wolcott, California Department of Agriculture, will serve as captain of the northern team while Louis Loubet of the J. P. Loubet Co., Los Angeles, will head the southern group. F. H. Corzine of Charles T. Taylor & Co., Los Angeles, is in charge of arrangements.

Dick Webster is chairman of the golf committee which plans a blind bogey tournament at the Riviera Country Club on April 12. Tee-off time is 8 a.m. to 12 noon. Free lunch will be served.

The annual dinner dance will begin at 8 p.m. April 13 at world-famous Cocoanut Grove. A cocktail hour beside the hotel swimming pool will precede the dinner. Reservations are being accepted by Gladys Odell of Pillsbury Mills, Inc.

A fashion luncheon has been arranged for the ladies on opening day at the new Beverly Hilton Hotel. A continental breakfast for ladies only will be served at the Ambassador the morning of April 13.

ARKANSAS TRAVELERS—Convention goers at the recent annual meeting of the Midwest Feed Manufacturers Assn. in Kansas City were these Arkansawyers (left to right): Kirk Hale, C. A. Swanson & Sons, Fayetteville; Collier Wenderoth, Jr., O. K. Feed Mills, Fort Smith; Dr. E. L. Stephenson, professor of animal husbandry, University of Arkansas, Fayetteville; Fred Darragh, The Darragh Co., Little Rock, and Henry DeSalvo, Arkansas State Plant Board, Little Rock.

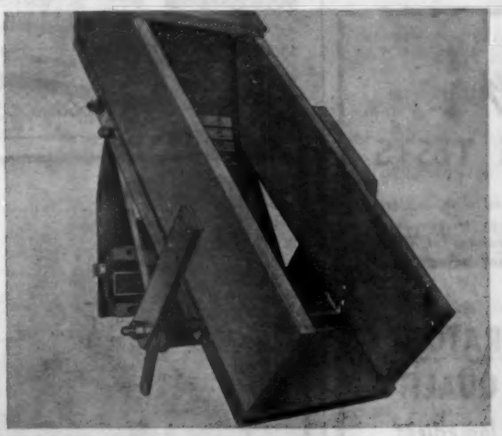
Advertisement

NEW PRODUCT NEWS

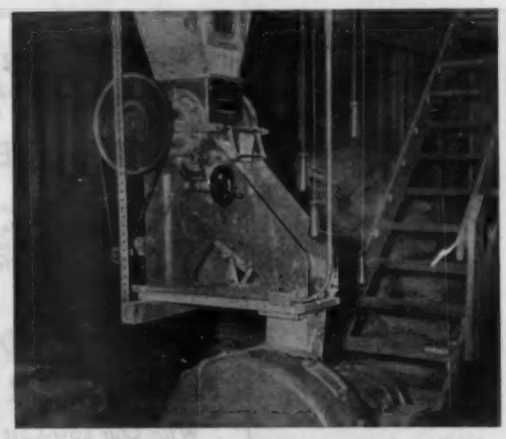
STRONG-SCOTT'S FEEDER-MAGNETIC SEPARATOR GIVES GUARANTEED PROTECTION—AT LOW COST

STRONG-SCOTT'S Feeder-Magnetic Separator gives a regulated flow of material at any capacity you select—removes all scrap metal from the grain through powerful magnets—and, by means of a scalping grid, filters out foreign matter, such as stones or other harmful articles.

Here at the Hazel Run Produce Co., Hazel Run, Minnesota, 25% to 30% greater capacity results thru selective control of material flow. No dismantling of parts to clean the magnets. Simply snap open the magnet release—metal scraps fall clear—snap the magnet release closed.



As shown above, the same type magnetic unit used in the Feeder-Magnetic Separator, may be installed in a Sloping Spout. The spout magnet assemblies have the same features: self-cleaning—safety locking—and floating action.



This light weight, easily installed Strong-Scott Feeder-Magnetic Separator protects the Attrition Mill at the H. A. Hilmen Co., Dakota, Illinois, from damage, and keeps it operating steadily at full capacity.

WRITE FOR FREE COLOR BULLETIN

Detailed information on the equipment shown above will be sent on request. Simply drop a card or a letter to the Sales Department at the Strong-Scott Mfg. Co. 451 Taft Street, Minneapolis 13, Minnesota.

The Strong Scott Mfg. Co.

Equipment Designed for Better Processing

451 TAFT STREET, MINNEAPOLIS 13, MINN.

Dept. FS-317

Hilltop Laboratories 718 Washington Ave. N. Minneapolis 1, Minn

FOR
WELL-BALANCED
NUTRITIVE FEEDS
WITH
GRAIN FERMENTATION PRODUCTS

PRODULAC

CORN DISTILLERS SOLUBLES WITH DRIED GRAINS

NADRISOL

CORN DISTILLERS DRIED SOLUBLES

The feeds that promote quicker growth and greater meat and egg yield are the feeds your dealers and their customers want to buy:

Produlac or Nadrisol—grain fermentation products—are standardized, both products having the same riboflavin content and choline content.

With either Produlac or Nadrisol you can mix highly nutritive formula feeds. These economy fortifiers are rich in proteins—vegetable fats—and essential Vitamin B-G Complex factors, as well as unidentified growth factors.

Mix either Produlac or Nadrisol in your formula feeds. It's a good way to gain and hold customer acceptance.

Sold only to manufacturers of formula feeds.

Products of

NATIONAL DISTILLERS
PRODUCTS CORPORATION
GRAIN PRODUCTS DIVISION
99 PARK AVENUE, NEW YORK 16, N. Y.

Farm Income Data Show Continued Importance of Animal Agriculture

WASHINGTON—The U.S. Department of Agriculture's recent report on farmers' income and cash receipts includes some information of interest and significance to the feed industry.

As has been noted previously, farmers' net income in 1955 was, of course, lower than in 1954. However, it is interesting to note that receipts from livestock and products continued well ahead of receipts from crops—further evidence of the current importance of animal agriculture.

Farmers' net income in 1955 is now estimated at $10.8 billion, down 9% from 1954. The decline was due to lower average prices of farm products and a slight increase in farm expenses. Net income after the adjustment for inventory change was $11 billion in 1955. Adding farm wages of $2 billion and $6 billion of income from non-farm sources gives $19 billion as the total income of the farm population—5% below 1954.

Figures on cash receipts from farm marketings show that farmers received $29.4 billion from marketings in 1955, down 3% from 1954 because of lower average prices. Total volume of marketings was up a little.

Cash receipts from livestock and products last year were $16 billion, 4% below 1954, with prices averaging 7% lower and marketings somewhat larger.

Crop receipts, meanwhile, totaled $13.4 billion, less than 1% below 1954 as lower prices were largely offset by increased marketings.

Thus, it can be seen that receipts from crops were $2.6 billion below receipts from livestock and poultry operations.

Commodities from which receipts were down included meat animals and a number of crops. Items which were up included broilers, chickens, eggs, turkeys, dairy products and a number of crops.

Cash receipts were down in 1955 for all of the meat animals, mainly because of lower average prices. Receipts from hogs dropped 21%, though marketings were up 14%.

$2.00 vs. $5.00*

PHOSPHORUS

DOLLARS AND PHOSPHORUS ARE ALWAYS EQUATIONS THAT REQUIRE CONSTANT VIGILANCE

Feed buyers can pay most any price per unit for Phosphorus . . . from $2 to over $5*. Why not consider COLUMBIA SOFT PHOSPHATE for your low cost source of Phosphorus. It delivers at the lowest cost per ton and per unit. Also immediate service year in and year out.

Write for full information and prices.

COLUMBIA PHOSPHATE CO.
1007 WASHINGTON AVENUE
ST. LOUIS 1, MO.

*Comparison varies plus or minus depending on freight, analysis, etc.

Diethylstilbestrol
Nicarbazin
Nitrophenide
Arsanilic Acid
Sulfaquinoxaline
Dienestrol Diacetate
Nitrofurazone
Calcium Salts
Furazolidone
Trace Minerals
Vitamins

Doty
RUNS THESE TESTS

We are fully equipped with modern facilities for the tests of the new feed additives as well as protein, fat, fiber, etc. We check your feed potency regularly at low cost.

USE OUR LABORATORY
PROTECT YOUR QUALITY

With Our Low-Cost Ingredient Assay Plan

Your feeds can be labeled "Laboratory Controlled" at remarkably low cost to you. Write or call for full particulars.

Doty
TECHNICAL LABORATORIES
8 W. 9th St., Kansas City, Mo.

BIGGER SWEET FEED PROFITS

TEXAS CYCLONE

feed mixing units were made to work as a team—or to fit in with existing facilities. Shown here is the TEXAS CYCLONE FEED MIXER in combination with the TEXAS CYCLONE SWEET FEED MIXER—the finest mixing combination you can find. Molasses mixing is made easier and better with a patented spray process that insures blending. Write for free description folder.

SIMPLE TO OPERATE
EASY TO MAINTAIN

That's what users say about Texas Cyclone. Simple in design. Few moving parts. Low upkeep. Hundreds in use for many years.

NORWOOD
MANUFACTURING COMPANY
MINERAL WELLS, TEXAS

Cattle and calves were down a little because of slight declines in prices and volume. Cash receipts from poultry and eggs as a group were up 8%, with broilers up 12%, eggs up 9%, other chickens up 6%, turkeys up 1%. Dairy receipts were up slightly.

Figures on the different states and regions showed that most states had declines in cash receipts in 1955. However, increases were recorded in some of the northeastern and southeastern states and California. Increased receipts from poultry and dairy operations were among the factors contributing to the gains in most of these states.

SALESMAN DIES

TOLEDO, OHIO—Robert P. Kearney, 32, Perrysburg, died recently in a Toledo hospital after suffering a heart attack three weeks before. He was a salesman for Saunders Mills, Inc. Among his survivors are his widow and two sons.

Coronet Phosphate Co. Names Sales Agent

NORFOLK, VA. — R. S. Rydell, president of Coronet Phosphate Co., has announced the appointment of J. Paul Smith Co., 1105 Electric Bldg., Ft. Worth 2, Texas, as distributors for Coronet's defluorinated phosphate in the states of Texas, Oklahoma, Arkansas, New Mexico and Louisiana.

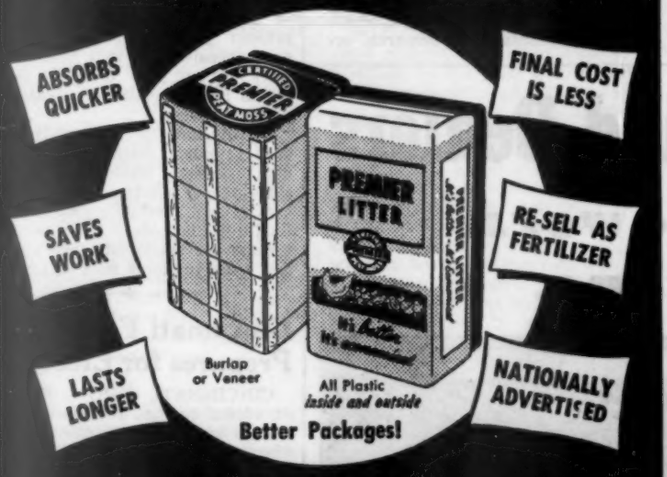
In the Far West, Schroeder Sales Co., Long Beach, Cal., distributes the feed supplement, and in the Southeast, K. S. Crittendon, Inc., and Smith Grain Co. are sales agents.

NEW STORE OPENS

HUTCHINSON, MINN. — A new feed store, the Four Square Farm Store, has been opened in Hutchinson. Lee Steck of Silver Lake is manager of the store which partnership includes Joe Gehlen, Silver Lake, and John Bandas. The firm handles Purina products and will have a portable grinding and mixing service.

PREMIER PEAT LITTER

absorbs as much as 4 times more than other material



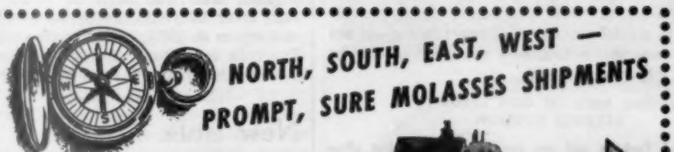
Write, Wire or Phone for Details

PREMIER PEAT MOSS CORP., 535 FIFTH AVE., NEW YORK 17, N. Y.

Profitable for Chicks, Customers and for You!

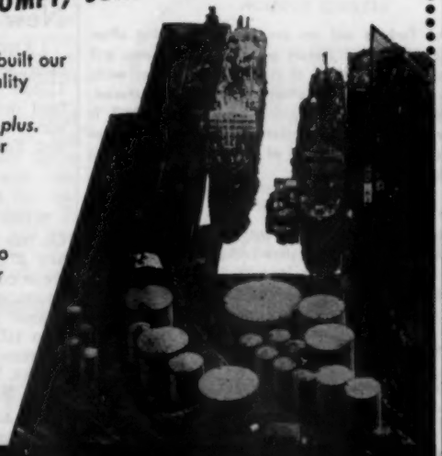
Time to Replace With CALUMET CUPS

Using inefficient old-type cups on your equipment? Replace them with the Calumet cup with the logarithmic curve! It gives a natural flow of grain at the discharge head. Flow of grain is not retarded by frictional resistance. It's the most used cup by far — more than 5,000,000 made and sold to date. Order through your jobber or direct to B. I. Weller Company, 327 South La Salle Street, Chicago, Ill.



NORTH, SOUTH, EAST, WEST — PROMPT, SURE MOLASSES SHIPMENTS

Since 1918, we have built our reputation on top quality blackstrap feeding molasses and service-*plus*. Today, more than ever before . . . with strategically-located distributing terminals from the Gulf to Canada, from coast to coast . . . we can offer the utmost in prompt delivery and shipping economy. Phone, wire or write us for delivered prices in tank trucks or tank cars.



NATIONAL MOLASSES COMPANY

Executive Offices: ORELAND, PA. Phone: Livingston 8-5900 (PHILA.)

for IMPROVED PARTICLE SIZE REDUCTION...

NEW IMPACT-RESISTANT ROTOR and LINER!

abrasion-proof • corrosion resistant • chemically inert

The new "Entoleter" Impact Mill design features a rotor and liner of abrasion-proof ceramic material at points of impact... commercial applications prove outstanding wear and corrosion resistant characteristics required for complete agglomerate dispersion and particle size reduction in the Feed Field.

For further information concerning lower maintenance costs on particle size reduction or ingredient dispersion... fill in the coupon below:

Name..... Title.....

Company..... Street.....

City..... Zone..... State.....

TYPE OF MATERIAL PROCESSED.....

☐ I am sending a sample of our product (5-25 lbs.) to your laboratory for free processing on the new "ENTOLETER" IMPACT MILL with the new rotor and liner.

The trademark "ENTOLETER" is your guarantee of complete satisfaction

ENTOLETER DIVISION

The Safety Car Heating & Lighting Company, Inc.

1169 Dixwell Ave., New Haven 4, Connecticut

TRADE MARK REG.
VITA-GEE
A LIVE YEAST CULTURE — for 4-footed animals and poultry. Supplies all known B Complex Vitamins including B_{12} plus other nutritional factors. Easy to add to any formula.
Write or Wire for sample and prices.
ZELLERS' LABORATORIES READING, PA.

Processing of Poultry Waste to Be Studied

WASHINGTON—Plans have been announced for a study aimed at determining whether it is economically possible and practical for poultry slaughtering plants to process their poultry waste into by-products which could be readily sold.

The study will be made by Battelle Memorial Institute, a research organization in Columbus, Ohio, under a $20,000 contract with the U.S. Department of Agriculture.

USDA specialists say that the total amount of raw offal and feathers from poultry plants would be worth more than $3 million a year if the waste all were processed into protein feed products and grease.

At present, USDA said, full use is made of waste only in the main broiler areas. The specialists said that present waste recovery techniques are expensive and that much of the work is not now done in poultry plants but in renderers' plants some distance away.

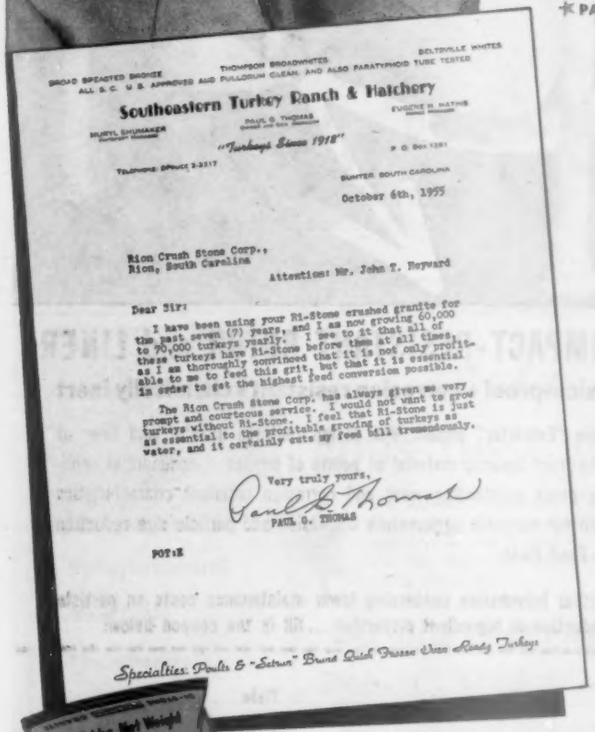
USDA and the research institute plan to study methods of handling and processing waste within poultry slaughtering plants and to determine poultry and rendering plant size and facilities necessary to profitably process the waste into feed products and other products such as fertilizer.

Attention Feed Mills and Dealers

This is What Growers Think of Ri-Stone.

—Writes Paul G. Thomas, Owner-Manager
SOUTHEASTERN TURKEY RANCH & HATCHERY
Sumter, South Carolina

- SECRETARY SOUTHEASTERN POULTRY & EGG ASSOCIATION
- PAST PRESIDENT DIXIE POULTRY EXPOSITION
- PAST PRESIDENT S. C. TURKEY FEDERATION
- PAST DIRECTOR NATIONAL TURKEY FEDERATION



BROAD BREASTED BRONZE — THOMPSON BROADWHITES — BELTSVILLE WHITES
ALL N. P. I. P. APPROVED AND PULLORUM CLEAN, AND ALSO PARATYPHOID TUBE TESTED

Southeastern Turkey Ranch & Hatchery

MURYL SHUMAKER — PAUL G. THOMAS — EUGENE H. MATHIS

"Turkeys Since 1918"

TELEPHONE SPRUCE 3-2217 — P. O. Box 1281

SUMTER, SOUTH CAROLINA

October 6th, 1955

Rion Crush Stone Corp.,
Rion, South Carolina

Attention: Mr. John T. Hayward

Dear Sir:

I have been using your Ri-Stone crushed granite for the past seven (7) years, and I am now growing 60,000 to 70,000 turkeys yearly. I see to it that all of these turkeys have Ri-Stone before them at all times, as I am thoroughly convinced that it is not only profitable to me to feed this grit, but that it is essential in order to get the highest feed conversion possible.

The Rion Crush Stone Corp. has always given me very prompt and courteous service. I would not want to grow turkeys without Ri-Stone. I feel that Ri-Stone is just as essential to the profitable growing of turkeys as water, and it certainly cuts my feed bill tremendously.

Very truly yours,
Paul G. Thomas
PAUL G. THOMAS

POT:E

Specialties: Poults & "Lectrun" Brand Quick Freeze Oven Ready Turkeys

Probably nowhere in the country is there a man more experienced in producing poultry products than Mr. Paul G. Thomas, Sumter, S. C. For instance, he averages raising between 60,000 and 70,000 turkeys annually in addition to his other vast poultry operations. In such a large-scale operation it is absolutely necessary to get the highest possible degree of feed conversion. Good feed is, of course, essential, but those like Mr. Thomas, who have made poultry their life work and study, know that even the best food is much more efficient when RI-STONE The Supreme Insoluble Granite Grit is made available to their flocks at all times.

EVERY TYPE AND AGE OF POULTRY NEEDS RI-STONE

You see, grit in their gizzards is the only teeth chickens and turkeys have. Without the proper kind and quantity of grit they can't thrive because their food doesn't digest properly. RI-STONE in the gizzard thoroughly pulverizes feed grains and coarse, fibrous materials, making their nutrients available for fast conversion into meat and eggs.

WRONG KIND OF GRIT LEADS TO GIZZARD EROSION

Chickens and Turkeys will eat any kind of grit, but often they eat the wrong kind, especially when on range. Some grit will shatter under the pressure of the gizzard muscles while other types will dissolve. This often causes gizzard erosion, serious wastage of food and retarded growth. RI-STONE is hard, sharp granite grit . . absolutely insoluble. Keep your flocks from eating the wrong kind of grit by furnishing them the right kind . . RI-STONE.

ALL BIRDS LOVE RI-STONE

RI-STONE comes to you clean and sparkling with the proper amount of black mica specks to attract the fowls and assure that they will eat enough of it to keep their gizzards grinding out food nutrients. Make it available and it will save you up to 20% on feed bills, speed growth, increase egg production and promote general health of your flocks. If you are not already feeding RI-STONE, take Mr. Thomas' tip . . . start today!

Write for copy of POULTRY GRIT FACTS.

80 Lbs. Net Weight
SHARP-INSOLUBLE
CRUSHED GRANITE
RI-STONE
MANUFACTURED BY THE AGGREGATE DIVISION RION CRUSH STONE CORP. RION, S. C.

Get Ri-Stone in the economical 80 pound bags. There are proper sizes for all ages . . . for chicks, poults, broilers, pullets, hens and grown turkeys.

Fine Aggregate Division
RION CRUSH STONE CORP.
RION, S. C.
QUARRIERS OF GRANITE FOR OVER 70 YEARS

Cincinnati Feed Club Prepares for Election

CINCINNATI, OHIO — Following an annual custom, two slates of candidates will battle for election as officers of the Cincinnati Feed Club, Sherwood Williams, nominating committee chairman, announced at a monthly dinner meeting March 5 in the Cincinnati Club. The election will be a feature of the annual meeting in May.

This year's co-chairmen, A. J. MacGregor, Kentucky Chemical Industries, Inc., and Dr. Lawrence E. Carpenter, Distillers Feed Research Council, Inc., will have no opposition for chairman and secretary-treasurer, respectively. Other candidates are:

Pellet ticket, vice chairman, Carl A. Pollak, Werthan Bag Corp., and directors, Ed G. Koehl, Ed G. Koehl Co., Inc., and Edward P. Henderson, Schenley Distillers, Inc. Frederic Emmert, F. L. Emmert Co., will be the Pellet campaign chairman.

Mash ticket candidates are: Vice chairman, John F. Young, John F. Young Co., and directors, James M. Dean, Buckeye Cotton Oil Co., and Charles M. Winchell, Darling & Co. Lucian Garner, Lawrenceburg Grain Co., is the Mash campaign chairman.

Following a hilarious discussion, it was voted to make the May meeting a husband-and-wife affair, the same as last year. Previously, the annual meetings had been stag affairs, with appropriate entertainment.

The 45 members and guests present March 5 heard an entertaining and informative talk about Israel by Sam Golden, Amburgo Co., Philadelphia, who was born in Palestine and, after 34 years, returned in 1951 and again in 1954, to his native land. The talk was illustrated with colored motion pictures taken on those trips.

New Bulk Truck

LANCASTER, PA.—John W. Eshelman & Sons has purchased a new 11-ton capacity air unloaded bulk feed delivery truck. This truck will serve the local areas of the Lancaster and York, Pa., plants.

STOCK CONVERTED

NEW YORK—American Cyanamid Co. has announced that during February 37,674 shares of preferred stock were converted into 75,925 shares of common stock. In January 49,964 shares of preferred were converted into 100,200 common. As of Feb. 28, outstanding shares were: preferred stocks, 396,542 shares; common stock, 9,170,255 shares.

ALL FEED INGREDIENTS
Eugene L. SELDERS CO.
"The Polka Dot Folks"
BOARD OF TRADE
KANSAS CITY 5, MO.
Victor 1-4384 TWX-KC 29

Oral Hormonizing of Poultry

By Dr. Sidney Goff, Henry M. Swanson and Howard L. Tiger

EDITOR'S NOTE: Hormone treatment of poultry as well as beef cattle is now being practiced through inclusion of a hormone-like material in the feed. In the case of poultry, the compound added to the feed is dienestrol diacetate. In the accompanying article, the oral hormonizing of poultry, and its results, are discussed. This article is a condensation of a paper presented by Henry W. Swanson, manager of the agricultural division of White Laboratories, Inc., Kenilworth, N.J., at the recent Fact Finding Conference of the Institute of American Poultry Industries in Kansas City. The paper was prepared by Dr. Sidney Goff, Mr. Swanson and Howard L. Tiger, all of White Laboratories.

During the past 10 years the practice of treating poultry broilers and roasters with hormones—specifically, estrogenic hormones—has become quite widespread. Hormone-treated or hormonized birds are being raised, processed, and sold in various parts of the country today.

Certain hormones affect primarily the sexual characteristics, and these are commonly called "sex hormones." The sex hormones comprise two general classes: (a) Androgens — these are produced (secreted) by the testes and stimulate male development. (b) Estrogens—these are secreted by the ovary and stimulate the uterus in the mammal and the oviduct in the bird and induce the development of female characteristics.

A number of synthetic organic compounds exert physiological activities that resemble the natural estrogens; hence these are called synthetic estrogens. Among these are diethylstilbestrol, dienestrol and hexestrol.

Physiological Effects

The practice of surgically caponizing cockerels, which has been carried on for many years, was probably the first method of altering the natural hormone balance in poultry. This is accomplished by surgically removing the testes at about 6-8 weeks of age. Thus the normal production of male hormone (androgen) within the bird is eliminated and the female hormone (estrogen) which is normally produced at low level in the male, becomes dominant, i.e., the bird is feminized via his own internal mechanism. This feminization is manifested by shrinkage and loss of color of the comb and wattles, by reduction in physical activity of the bird, by increased plumpness and tenderness and by increased fat deposition under the skin and in the abdominal cavity. However, it takes 6-10 months after surgery for these physiological changes to take full effect.

It is apparent that the surgical method has no application in the broiler or fryer field because these birds are marketed before any substantial physiological effects can appear. However, during the 1930's it was observed that cockerels and immature pullets, injected with large doses of female sex hormones, showed characteristics resembling those found in normal adult laying hens.

In these early studies, the estrogenic materials were administered by injection. In the early 1940's, similar results were obtained with implantation of pellets of diethylstilbestrol under the skin in the upper neck region. This product became available commercially about nine years ago. Subsequently, injectable paste and liquid forms of this substance were marketed. With these treatments, the hormonizing effects began to appear within a few days after injection and were well established within 3-6 weeks after treatment was initiated. Thus it became possible to start treating broilers and fryers at the age of 7-10 weeks and to market them advantageously for the full hormonizing effects at the age of about 10-14 weeks.

More recently, the method of chemical hormonizing by administration in the feeding ration was investigated. Dienestrol diacetate was selected as the compound to be incorporated in the feed. The ingestion of feed suitably fortified with this compound produces the desired hormonizing results.

Since the early part of 1955, this product has been marketed by White Laboratories, Inc., under the trade name of "Lipamone." This product is made up of dienestrol diacetate at a level of 14% in a vehicle of a special grade of corn distillers' dried grains. One pound of the dry product per ton of finished feed supplies 31.75 mg. of active ingredient per pound or, percentage-wise, the ration contains 0.007% dienestrol diacetate. This level of fortification provides an adequate intake of the active ingredient when the ration is fed during the final three weeks before slaughter.

Safety of Oral Method

After selecting dienestrol diacetate for oral use, research was carried on to prove its safety in practical usage. It was first shown to be free of toxic action in the chicken. Other tests showed that treatment did not result in any addition of estrogenically active material to the edible tissues of the birds.

Poultry offal, which includes heads, feet, inedible viscera, intestines and contents, is utilized commercially as a source of protein for animal feeds after proper processing. The feeding of ground raw offal must be avoided particularly with respect to fur-bearing animals.

As stated above, there is no measurable estrogen left in the carcass when oral hormonizing is used. So far as the intestinal tract is concerned, the labeling instructions on

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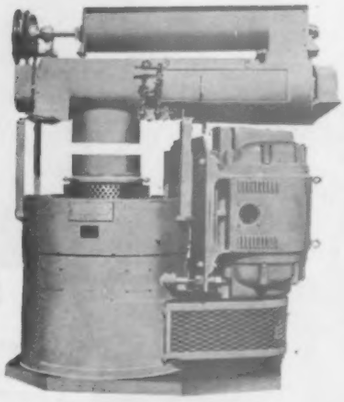

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the finished feed specify an over-night depletion period, and our tests show that the non-hormonized feed consumed during this period effectively flushes the hormone out of the bird's gastrointestinal system.

For the proper control of the uniformity of the final hormonized feed, a photocolorimetric chemical assay method was developed. Essentially this procedure consists of complete extraction of the active ingredient and then the development of color by a reaction with a solution of vanillin in glacial acetic acid. At present a blank determination on the same vehicle or feed without dienestrol diacetate must be carried through simultaneously. Colorimetric comparisons are made against standard preparations.

Field Results

Let us now consider some measurements of hormonizing effects that were made in a typical evaluation trial. The birds were Red Vantress Cross mixed sex, grown for the first seven weeks on a Pennsylvania farm. Their last three weeks were spent in batteries at an experiment station laboratory. "Lipamone"-fortified feed was given to the test group during their 8th, 9th and 10th weeks. The control group received the identical ration which was not fortified with the hormone material. Very marked end-organ responses were obtained in this test. There was very dramatic inhibition of comb and testes development in the males and equally striking oviduct stimulation in the females. There was an increased deposition of abdominal fat in both sexes.

The question of the water content of the carcasses of treated birds as compared with untreated birds has been raised on several occasions. Do the treated birds either naturally contain more water, or absorb more water during processing than do the untreated or control birds? Actual determinations were made, and the data obtained actually show a trend towards lower moisture content in the treated birds. However, several additional confirming tests would be required before drawing final conclusions.

The facts above prove clearly the substantial changes in the combs, wattles and testes of the male and the oviducts of the female. It is apparent that such objective physiological alterations must be reflected in other characteristics that are of practical importance. The appearance of the finished birds is one such characteristic. Comparisons show the better bloom of the treated birds, which is undoubtedly due to added subcutaneous fat.

Another less tangible effect is one which in the long run may prove to be just as important as facts and figures that can be put on paper. One observes the greater tranquility of these orally hormonized birds, and it leaves the impression that such birds will be generally healthier and more resistant to infections. We frequently receive reports from growers to that effect.

Furthermore, it must be borne in mind that with this oral method, it is just a matter of switching to the treated feed at the predetermined time. The change is made without any shock or any other adverse effect on the bird.

Debeaking

It is, of course, clear that the sole application of any particular method of treatment does not insure a high quality product. Good management, good breeding and good nutrition are still of paramount importance. Also the alert grower will always be on the lookout for additional methods that result in improvements. For example, such an advance is the practice of debeaking. This is generally done before the age of five weeks but

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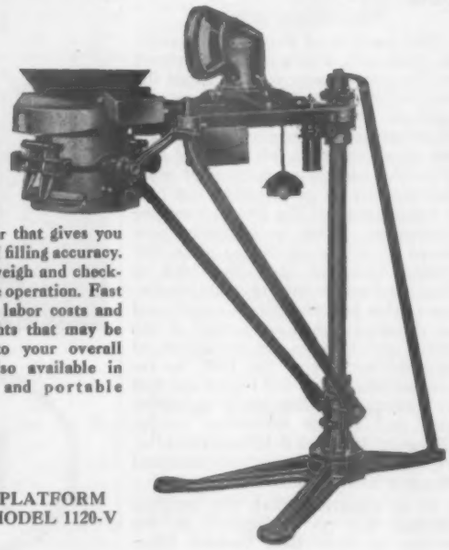

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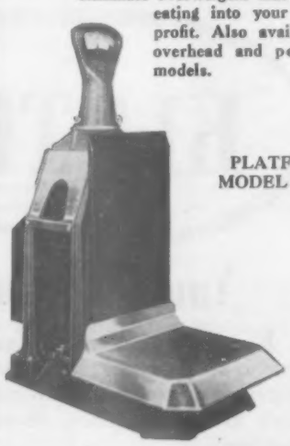

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recent investigations indicate that the earlier the better. For example, the University of Maryland recently reported that debeaking one-day-old birds produced the desired effect without any noticeable ill-effect on the birds. This newer technique is reported to be very effective in reducing feather pulling, thereby reducing bare-backs.

As previously stated, the hormonizing of market poultry provides as one of the advantages a cushion of fat under the skin. For that reason, hormonized birds must be handled with more care to avoid carcass bruises, especially when they are loaded for transport from the farm to the processing plant.

The more tangible effects of oral hormonizing have been demonstrated in many field trials, particularly with respect to finished weights and feed conversion efficiency. The results of 17 trials involving 85,000 birds may be broadly summarized as follows:

(a) On the average, the weight increase is about 3%.

(b) At the same time the feed conversion is improved so that the yield of bird per cwt. of feed is increased almost 3%.

(c) This combined effect of increased weight and decreased feed consumption per pound of bird results in an increased return that generally balances the cost of treatment.

Further examination of the figures shows that the selling price per pound was generally equal to or only slightly higher for hormonized birds than for the untreated controls. Investigation of this point in the field indicates that this condition is temporary and that, once the treated bird is established in trade channels and recognized by the consumer, it will command an appreciably higher price and better demand.

Another recent field trial was conducted on older birds on a farm in New York. These birds were Arbor Acre White Rock cockerels. In one room, 3000 birds received only the regular ration while in another room a similar group of 3000 birds was placed on hormonized feed at the age of 11 weeks, 4 days. Three weeks later all the birds were slaughtered. In this case the figures showed that the improvement in weights and feed conversion were of the same order; furthermore, there was a 2¢ per lb. premium on the treated birds. The combined weight, feed conversion and price advantages of the treated birds resulted in a net return of $132 per 1000 birds above the cost of the "Lipamone" to the grower.

Summary and Conclusions

Extensive field studies of oral hormonizing with dienestrol diacetate in comparison with controls on untreated feed, under various conditions and in widely scattered areas, indicate the following:

(a) This method provides a means of hormonizing birds effectively as demonstrated by distinct changes in the end organs.

(b) These physiological changes are reflected in improved appearance and quality, as well as improved weights and feed conversion.

(c) Generally the improved weights and feed conversions balance the cost of treatment; there are clear indications that the quality improvements will command a price premium when treated birds are established in the market.

(d) These results are accomplished without shock to the birds; in fact they are tranquilized.

(e) The method provides complete safety since tests prove there is no residual estrogen in the edible tissues.

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Research Expansion Proposed at Arkansas

LITTLE ROCK, ARK.—Arkansas farm organization leaders met here recently with Dr. John Tyler Caldwell, president of the University of Arkansas, to learn about the proposed new program of agricultural research.

University officials plan to ask the 1957 legislature for an appropriation of $867,480 annually for the 1957-59 biennium to finance some 48 new research projects at the agricultural experiment station. Additional money will be asked for getting and keeping able experiment station professional and non-professional workers.

Among the proposed projects outlined by Mr. Caldwell were the following: Mechanized feed handling on farms; poultry housing, including ventilation, air conditioning, insulation and other factors; artificial insemination in turkeys and chickens; systems of breeding turkeys; beef cattle feeding and management problems in the Delta; effects of pasture grazing and management practices on digestibility and nutritive value of permanent pasture species; swine nutrition, with particular reference to rice by-products, poultry feathers and forage, and swine management practices.

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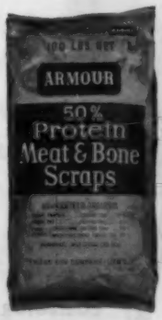

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New Developments in Swine Nutrition

By DR. J. L. KRIDER, McMillen Feed Mills

EDITOR'S NOTE: The accompanying article summarizes recent developments in swine nutrition which will be of interest to feed men. It is a resume of the talk presented by Dr. J. L. Krider, vice president and director of feed sales, McMillen Feed Mills, Ft. Wayne, Ind., at the recent Kansas Formula Feed Conference.

Twenty-five years ago it took about 425 lb. of feed per 100 lb. of gain, weaning to market. Today the same amount of feed will produce 122 lb. of gain, an extra 22 lb. We have reduced the time to attain market weight as much as 23%; seven pigs are weaned per litter versus six then, and on good farms 8 to 10 pigs are weaned per litter.

Twenty-five years ago the average weaning weight was about 25 lb. Today, 40- to 50-lb. average weaning weights are common. Why and how? It's due to improved nutrition, breeding and management.

Nutrition advances point toward faster and more efficient results, or to lower cost results.

AMINO ACID BALANCE—Amino acid balance in the ration and quality of proteins used are vital in modern rations. See Tables 1 and 2.

Tryptophan is the limiting amino acid in meat and bone scraps and tankage for balancing corn for pigs, while lysine appears to be limiting in linseed meal, cottonseed meal, peanut meal and distillers solubles. Proper combinations of soybean oil meal, animal, fish and vegetable proteins should be used to supply proper amino-acid balance.

Pigs fed a 16% protein ration produced carcasses with 1.6% more lean cuts and 4½% less fat than pigs fed 12% protein; and they made 12½% faster gains up to 100 lb. (J. Anim. Sci., 14(4):1224, 1955.)

BRED SOWS—For bred sows, feed costs were cut 28% by feeding either legume-grass silage (plus 0.6 lb. corn and 1 lb. supplement per head daily), or corn silage (plus 2 lb. supplement per sow daily) at Purdue. Similar results were reported by Illinois by feeding 3½ lb. of a balanced ration with 6.6 lb. legume — grass — silage daily per head. Sulfur dioxide silage is not suitable.

STARTERS—Palatable, nutritious, properly fortified pig starters containing 17 to 21% protein for creep feeding pigs 7 to 10 days until weaning are recommended. Five to 20% sugar tends to increase palatability. Pigs ate more pellets with sugar mixed in feed than sugar-coated pellets by 22 to 1 for early-weaned pigs and 11 to 1 for pigs suckling the sows at Iowa. Pellets are preferred over meal or crumbles 2 to 1 and 5½ to 1, respectively.

At Illinois, pigs creep fed pelleted starter gained 22% faster and 100 lb. less feed was needed per cwt. gain of sows and litters than for no-creep lots. Pigs creep fed pellets at other stations were 8.0, 6.3 and 3.1 lb. heavier at eight weeks than those not creep fed. Pigs ate three times as much starter pellets from an indoor creep as from an outdoor one during early spring or bad weather.

FAT—One to 1½% in the ration is adequate, and all practical rations will usually be adequate. The use of higher levels will depend on the price of fats and other energy feeds such as corn, milo, etc. At Purdue University, levels of 1, 2, 3 and 4% of added lard did not affect rate or efficiency of gains (4½% fat in basal ration). When 6% lard was fed, 7% less feed was required per cwt. gain; and 10% less feed was needed when 8 and 10% lard was added.

Beef fat (10 to 15% in ration) was worth 115% of the value of yellow corn for pigs in Florida tests. Lard oil (10%) in the rations resulted in 16% less feed per cwt. gain at West Virginia. At North Carolina the addition of 10% fat to growing-finishing produced 6% faster gains on 17% less feed.

For baby pigs from two to three weeks of age to eight weeks, the addition of 5% of a lard-lecithin mixture was without significant effect (Minnesota).

VITAMINS—In addition to niacin and vitamins A and D, the following have significance in the formulation of modern swine feeds:

(1) **Riboflavin**—1.4 mg. per pound of ration for baby pigs; 1.2 mg. for 25 lb. pigs and 1.0 mg. for pigs over 25 lb., and 1.2 mg. for gestation-lactation.

(2) **Pantothenic acid** — 5.0 mg./lb. of ration to 50 lb. weight and 4.5 mg. thereafter are recommended by the National Research Council. However, Iowa workers found no deficiency symptoms in young pigs fed 2, 3 or 4 mg. per pound of ration

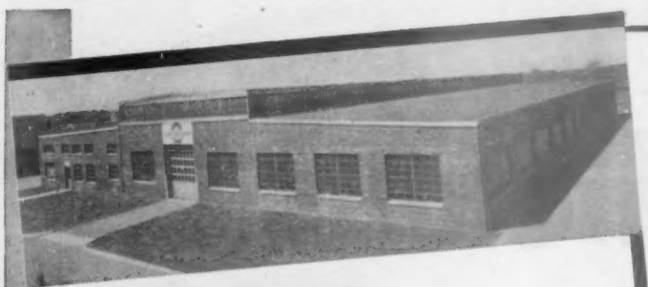
Table 1—Crude Protein Allowances in Per Cent of Ration

Class and weight	Fed in drylot or on poor pasture	Fed on good pasture
Bred gilts	15	13
Bred sows	14	11
Lactating sows	14–15	12–13
Breeding boars:		
Young	15	
Adult	14	
Pigs in creep	17–21	17–21
Pigs weaning to 75 lb.	16–18	14
Pigs, 75 to 125 lb.	14	12
Pigs, 125 lb. to market	13–13	10

Table 2—The Amino Acid Requirements of Weanling Pigs as Per Cent of the Ration*

L-Arginine	0.2	L-Valine	0.4
L-Histidine**	0.2	DL-Methionine†	0.6
L-Isoleucine	0.7	DL-Phenylalanine	0.46
L-Leucine**	0.6	L-Threonine	0.4
L-Lysine	1.0	DL-Tryptophan	0.2

†Cystine can replace one half (0.3%) of methionine requirement.
*National Res. Council Pub. 295.
**Mertz, et al, J. Anim. Sci., 14(4):1217, 1955.



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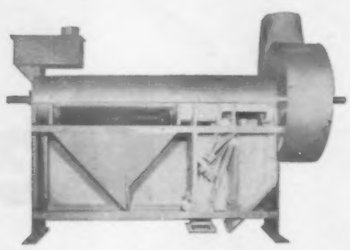

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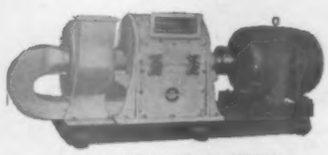

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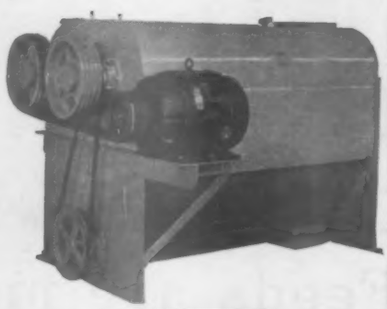

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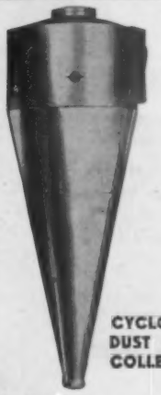

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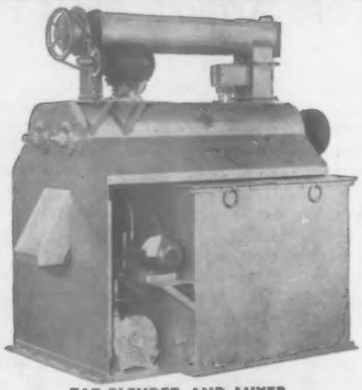

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and results were not significantly different from 5, 6 and 7 mg. levels. Sows appear to need the higher level (5 mg.) per pound.

(3) **Vitamin B_{12}** — 18 to 20 mg. per ton of dry ration are needed for baby pigs; 14 mg. per ton of ration for 25 lb. pigs and 10 mg. for pigs 50 lb. and over. B_{12} (40 mg. per ton) improved birth-weight and livability of pigs when added to a drylot ration of corn-soybean meal, minerals and vitamins A and D (Purdue University).

(4) **Unidentified Factors**—Various research results show that certain feed ingredients improve growth, feed efficiency or brood sow performance when added to rations considered adequate in carbohydrate, fat, protein and amino acids, mineral elements and identified vitamins. The researchers have concluded in many instances that the test ingredient supplied an unidentified factor or factors.

Before the isolation and identification of vitamin B_{12}, certain fish and animal by-products were considered to be sources of unidentified factors. However, later results indicated that most or all of this response was due to the vitamin B_{12} content of these feeds.

Nevertheless there is evidence in the literature indicating that the following ingredients are sources of an unidentified factor(s) during the nutritionally critical periods: green pastures, alfalfa meal, grass juice concentrate, condensed fish solubles, dried whey-product, dried corn distillers solubles, dried brewers yeast and some residues from fermentation and antibiotic production.

Often one or more of these feed ingredients are included in swine rations during the critical nutritional periods (pigs up to 75 lb. and gestation-lactation) to get optimum swine performance.

MINERALS—A high calcium level (over 1% in total ration) is a predisposing factor in parakeratosis, and zinc (50 to 100 p.p.m. from zinc sulfate) will prevent the occurrence of the disease. Zinc (100 p.p.m.) will help alleviate the symptoms.

It is suggested that calcium levels should be kept well below 1% in the ration of growing-finishing pigs (the calcium requirements are 0.8% for 25 lb. pigs; 0.65% for pigs 50 to 100 lb.; and 0.55% thereafter).

As phosphorus sources, soft phosphate with colloidal clay was unsatisfactory in recent Purdue tests (J. Animal Science, 14(4):1220, 1955). Steamed bone meal, defluorinated rock phosphate, dicalcium and monocalcium phosphate and imported rock phosphate were satisfactory phosphorus sources.

ANTIBIOTICS — The significant observations on the value of optimum levels of antibiotics in modern swine rations are briefly as follows:

(1) For pregnant sows, there is little or no benefit from feeding antibiotics.

(2) For lactating sows, antibiotic in the ration is not of benefit to the sow, but the pigs eat quite a lot of feed with the sow, so it should be in the ration.

(3) For pigs and sows during lactation, weaning weights have been increased up to 11 lb. per pig by feeding antibiotics.

(4) For growing-fattening pigs fed on drylot or pasture, gains from weaning to market are increased 5 to 20% (sometimes more) on the average, and 4 to 5% less feed is required per 100 lb. of gain. Runts and unhealthy pigs often show greater growth responses than these (46%—Iowa).

(5) Feeding antibiotics has no significant effect on back fat, depth or length of body or per cent of lean in the carcass.

(6) Feed consumption is increased and water intake is correlated directly with feed intake.

(7) An optimum level of the most effective antibiotics gives similar response as combinations, although there are isolated tests favoring combinations.

(8) Most antibiotics in common usage are reasonably stable in manufactured dry feeds (meal or pellets).

(9) The above benefits with pigs can usually be obtained with 5 to 6 mg. of an effective antibiotic per pound of ration (10 to 12 gm. per ton). About four times this level will be needed in a supplement for free-choice feeding or mixing with grain.

(10) The tetracyclines are the antibiotics of choice for pigs, with oxy- and chlortetracycline being equal.

(11) High levels of antibiotics (50 to 100 gm. or more per ton) in complete rations have been helpful in treating and controlling certain types of scours (non-specific enteritis) in pigs, but are not a cure-all. Feed high-level feeds when trouble appears and continue until animals return to normal, then return them to the regular level feed.

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Feed Service Bulletin Board

Helpful Notes on Feeding and Management for Feed Men and Their Customers

Marketing Quality Eggs

Ten production practices are essential to the production of quality eggs, according to W. R. Whitfield, extension poultryman at Iowa State College.

Mr. Whitfield says that failure to use even one of these practices greatly reduces the grade of a producer's eggs and, accordingly, the price they will bring on the market.

These essential practices, he says, are:

(1) Confine the flock. (2) Always produce infertile eggs. (3) Keep the litter dry in the laying house so the eggs won't get dirty. (4) Use darkened nests and have one nest for every four birds. (5) Gather eggs three or more times daily.

(6) Keep eggs in a separate room that is used only for storing eggs. (7) Cool the eggs overnight before casing. (8) Put them in a cool case with the large end up. (9) Hold the eggs in a room where the temperature is below 60° F. (10) Market eggs at least twice a week.

Mr. Whitfield advises the producer that his eggs can't command quality prices when these things happen to them: The air cell gets larger indicating loss of some of the content; the layer of thin white gets mixed with the thick white and effect is a thinned white that consumers don't like; the "anchors" that hold the yolk in place in the center of the egg may break down, or the yolk membrane itself may break, and the yolk may even stick to the shell.

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Beef Herd Selection

Results of tests at the Dixon Springs Experiment Station of the University of Illinois show the value of selecting beef cattle on the basis of their doing ability.

R. J. Webb, station superintendent, reports that rate and efficiency of gain, weaning weights, type and condition scores are the important factors being measured in the breeding program.

Rate of gain fortunately is highly inherited, Mr. Webb says, and is easily measured by regular weighing. Efficiency of gain is directly tied in with rate so that selecting the fast gainers also picks out the efficient doers.

Weaning weight of the calf is an important measurement of the mothering ability of the cow. It also reflects the ability of the bull to transmit growth. It is easily measured by a scale. Type and condition scores are a measure of production quality and are aids in keeping selection on an even keel, Mr. Webb says.

From a group of 119 yearling heifers available at the station last fall, about 60 were needed to replace cows culled from the herd. Weaning weights, fall weights and type and condition scores were kept on each heifer. It was easy to figure gain from weaning to yearling and quality of each heifer.

Since about half of the heifers were to be kept, those gaining above the average joined the herd and those below the average were fed out. One heifer that had gained above the average was culled because of a poor score, leaving 58 heifers in the "keeper" group and 61 in the culls.

A summary on these two groups shows that the keeper heifers weighed only 15 lb. more on the average at weaning than the cull group. But they scored two thirds of a point higher in type and condition and weighed 87 lb. more on the average as yearlings.

A listing of the bulls that sired these heifers shows that certain bulls

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have most of their daughters in the keeper group, while those of certain other bulls wind up in the cull group.

Since rate of gain is inherited, Mr. Webb says he can expect the keeper group to produce a faster gaining set of calves than would the cull group if they were kept. Knowing the sires of these heifers also helps him to pick the bulls to sell and the bulls to keep.

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Hog Cholera Threat

National serum producers have reported that fewer hogs have been vaccinated for cholera during the last year than in the depth of the depression 25 years ago.

Two Purdue University specialists, Dick Hollandbeck, extension swine specialist, and Dr. F. A. Hall, extension veterinarian, assume that pork producers have neglected vaccinating their hogs because of discouraging market prices.

Both Mr. Hollandbeck and Dr. Hall warn that this reduction in vaccination may cause a dangerous situation. A disease which is highly contagious and easily spread from herd to herd, cholera can wipe out an unvaccinated herd practically overnight.

To prevent such disasters, the Purdue specialists warn hog raisers to be sure to vaccinate breeding stock and all other hogs not already immune. They also remind farmers that it is best to vaccinate pigs at weaning age. Younger pigs than this often fail to develop permanent immunity while vaccination of older hog means extra expense since larger quantities of serum are needed.

Condition of the pigs at the time of vaccination is very important. Mr. Hollandbeck and Dr. Hall caution that only healthy pigs free of parasites should be vaccinated. For best results; careful vaccine injection methods should be followed and good quality products used.

In recent years, some farmers have grown careless about vaccinating for hog cholera because their herds have been fortunate enough to escape the disease. But swinemen who have fought cholera know how unprofitable it is to invest money in unvaccinated hogs, the specialists say.

◆

Debeaking Trend Noted

Buying debeaked chicks for broiler production has become an increasingly popular practice among poultrymen, says Ben Wormeli, extension poultry husbandman at Texas A&M College.

Chief advantages of debeaking, he says, are prevention of feather picking and cannibalism among chickens and turkeys. Live market grade of debeaked chicks is significantly better due to more complete feathering, and experimental evidence indicated that debeaked chicks tend to produce a pound of gain for less than non-debeaked birds.

Day old chicks are usually debeaked by the block method, searing off one third both top and bottom beak. Debeaking of adult birds consists of removing one third of the upper beak with a knife or a hot electric blade which cauterizes the area.

When debeaking is correctly done, the only real discomfort is due to extra handling, says Mr. Wormeli. The outer beak is the same type of material as horn and hoof, and careful removal does not produce pain. If laying hens are carefully handled during debeaking, egg production will not be lowered.

Debeaked birds tend to grow to more uniform size, feather more uniformly, be less nervous and have better eating habits, the A&M specialist says.

It is reported that hatcheries charge 25¢ for debeaking 100 heads, and where birds are raised in close quarters it would seem to be a good preventive investment for the commercial poultryman. Due to present trends, it is reasonable to expect an increase in the number of chicks and turkey poults that will be debeaked at the hatchery, says Mr. Wormeli.

◆

Repeat-Breeder Cows Studied

The last half of the month after breeding is the critical time for repeat-breeder cows, according to University of Wisconsin dairy specialists. It is estimated that an ovum (egg) will be fertilized in about 60% of hard-to-settle cows with no abnormalities of the reproductive tract. But these cows are repeat breeders because something stops the development of the embryo before the end of the first month. Some 55-65% of the fertilized ova in these cows do not develop into normal embryos during the first month, researchers estimate.

Now, research by H. W. Hawk, J. N. Wiltbank, H. E. Kidder, and Dr. L. E. Casida, livestock research workers at the University of Wisconsin, shows that the great majority of embryonic deaths occurring in repeat

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breeder cows between the third and 34th day after breeding actually takes place in the last half of the period—between the 16th day after breeding and the day the cow returns to heat.

To learn this, the researchers collected 100 repeat breeder cows which seemed to have normal reproductive organs. They bred these cows, then slaughtered half of them 16 days later. The other 50 cows were slaughtered 34 days after breeding. After slaughter, all cows were examined for normal embryos.

Of the group slaughtered at 16 days, 58% had normal-appearing embryos. That is almost the same as the estimated fertilization rate. But only 28% of the cows slaughtered at 34 days were carrying normal embryos. That means that 52% of the embryos alive at 16 days had died by the 34th day.

◆

Broiler Breast Blisters

After making observations on 61 different white-feathered broiler flocks, Dr. Ray Smith, University of Delaware, reports that wet litter seems to cause more blisters on broilers than dry litter.

He also indicates that birds sent to market at the heavier weights tended to show a higher percentage of breast blisters than the birds marketed at the lighter weights.

Plans Announced for Purdue Feeders Day

LAFAYETTE, IND. — Program plans have been announced for Purdue University's annual Cattle Feeders Day, to be held April 27 at the university.

Four research displays will be among the highlights of the program. Dr. W. M. Beeson, head of animal nutrition work at Purdue, said four other research projects also will be summarized.

Among the research displays will be an experiment with self-fed cattle designed to determine the best ratio of ground ear corn to a protein supplement, such as Purdue Supplement A, when mixed together and made available to steers 24 hours a day.

Visitors also can see the results of oral antibiotics and hormones fed alone or in combination, various levels of antibiotics in a fattening ration, and oral stilbestrol compared with various levels of implanted stilbestrol.

Three years' work in feeding chopped green forage to beef cattle will be summarized, and results of a trial in which a female hormone and an antibiotic were fed alone and in combination to fattening cattle in drylot will be reported by T. W. Perry and M. T. Mohler. The value of green corn stover silage versus mature stover silage for wintering calves and a comparison of high and low moisture corn when fed to fattening cattle will also be discussed by Purdue's team of animal nutritionists.

A. L. Neumann of the animal science department at the University of Illinois will discuss "Feeding Oat Silage to Beef Cattle."

Washington Feeding Studies to Be Outlined At Beef Cattle Day

PULLMAN, WASH.—A number of beef feeding studies at Washington State College will be reported on at the college's annual Beef Cattle Day, to be held April 27.

Rudy Setzler, extension livestock specialist for the college, described some of the feed research work being done in a talk at a recent stockmen's meeting. The research, being conducted at the college's beef cattle research laboratory, is under the direction of Dr. Irwin Dyer.

Research reported by Mr. Setzler includes wintering rations for feeder calves, steer-fattening rations, minimum feed requirements for pregnant heifers and wintering rations for steers. More than 108 animals are involved in the four studies.

The study of wintering rations for feeder calves, Mr. Setzler said, uses two plentiful feeds, wheat straw and rolled barley, as the basic ration. Purpose of the study is to determine the amount of natural protein supplements that can be replaced by urea and used with the two feeds to maintain weight and promote growth during the winter. Various combinations of cottonseed meal and urea are the protein supplements included in the study. Results to date indicate that cottonseed meal or combinations of cottonseed meal and urea produce equally satisfactory results, Mr. Setzler said, with urea the least expensive. The control animals fed only wheat straw and barley gained weight for a few weeks but are losing weight now.

A steer-fattening study is measuring weight gains obtained by adding animal fats, antibiotics or stilbestrol, singly or in combination, to a balanced fattening ration.

A study to determine the lowest nutritional level that it is safe to feed bred heifers was started July, 1955, and involves 54 pregnant beef heifers. Rations being fed include wheat straw, with and without alfalfa for roughage, plus small amounts of urea, and combinations of urea and alfalfa. Although serious vitamin A deficiencies are showing up now, there have been no abortions to date. The experiment will include observations of the weight and vigor of the calves.

In the fourth experiment, on minimum wintering rations for beef steers, the base ration is wheat straw plus molasses or urea or a molasses-urea mixture. To date all animals on the test are in about the same condition, indicating little or no difference in the value of the three supplements, Mr. Setzler said.

A detailed report will be made on all these studies at the Beef Cattle Day April 27 on the college campus in Pullman.

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Little Things in Merchandising Add Up—On the Cash Register

EDITOR'S NOTE: Advertising can bring traffic into the store but the heart of retail selling is at the point where the store's salesman comes face-to-face with the prospect. This is pointed out in the following article prepared by Frank Goodwin, professor of marketing in the college of business administration at the University of Florida, Gainesville.

v v

Let us assume that the retailer has planned correctly and has a stock of merchandise which his customers need and want. The store is laid out so that it can handle maximum traffic and customers can see most all the merchandise on display with no trouble. The goods are displayed in an attractive manner. Every opportunity for impulse buying is available.

All the retailer needs now is customers for his store. Actually, the retailer should go after his customers if he wants them. Some merchants just wait for them to come. Often that's a long wait.

Progressive merchants invite the customers to come. They advertise. If you want guests in your home, you invite them. If you want customers in your store, you must invite them too.

Good advertising has personality. Does yours? Look at some of your recent advertisements. Cover up, in those advertisements, the name of your store. How could you recognize your own advertisements if they were mixed up with other stores' advertisements? If you can't, you had better begin to think of ways to make your advertisements have some personality of their own so they can be recognized at once by your readers as yours.

Advertisements compete with news for the interest of the reader. They will lose the competition unless they are newsworthy. They must be timely and fresh. They must tell about products and services that are interesting right now to the reader. Do you plan your advertising efforts to tell your story at the season when it has the maximum appeal to the most readers, or do you just kind of advertise from time to time on impulse? It's so easy to plan an annual advertising budget, and it's so profitable too.

What Are You Advertising?

Are you advertising items on which you make the maximum margin? Are you advertising items which will create the maximum store traffic for you? Are you advertising items that you want to clear out before the season is over and you suffer a big loss by having to carry them over to another season? Why are you advertising the items you are advertising?

There are a lot of good reasons for advertising various items. But be sure you know why you are advertising the items you are advertising. Know what you want your advertising to achieve for you. When you know what job you want your advertising to do, you can look and see if it's doing that job for you. If you don't know what you are trying to achieve through an advertisement, or a series of advertisements, you have no basis for evaluating your advertising effort.

The retailer should depend on his window displays to help get customers into his store. Attractive, timely, and well-planned window displays do bring customers off the street into the store. Poor, tired, unattractive window displays do not bring customers into the store.

A window display that a passerby has seen before is exactly as interesting to him as a last week's newspaper. If you want to get the feel as to just how valuable tired, old window displays really are, just try to sell folks a few of last week's newspapers and you will have your answer. If you want your window to work for you, keep it fresh; keep it newsworthy; use imagination.

Having good window displays that can stop traffic and bring folks into your store takes planning. It may cost a little money and it will cost a lot of effort. But it will pay big dividends.

All modern retailers are trying to be good neighbors. It is true that you have to have customers, but, too, you have to have friends who are likely to become customers. This is goodwill, and it costs money and effort. In addition to other expenses, we have all that money spent for goodwill purposes.

What is all that money that has been spent worth? How much are all of these dollars spent for advertising and goodwill worth? Interior display costs — how much is that money worth? We have a real problem to answer those questions, because we have arrived at the very heart of the retail selling situation. Whether all of those spent dollars are worth a nickle on a dollar, or a hundred cents on a dollar, will be answered here at the heart of retail selling.

What is the heart of retail selling? When a customer comes in and a representative of the store comes face-to-face with him. At that point, the sale is made or it is lost. Right at that point, all the money spent on all of those other things can be lost if that salesman—the representative of the store—does or says the incorrect things.

If the salesman isn't a good, effective representative of the store, all

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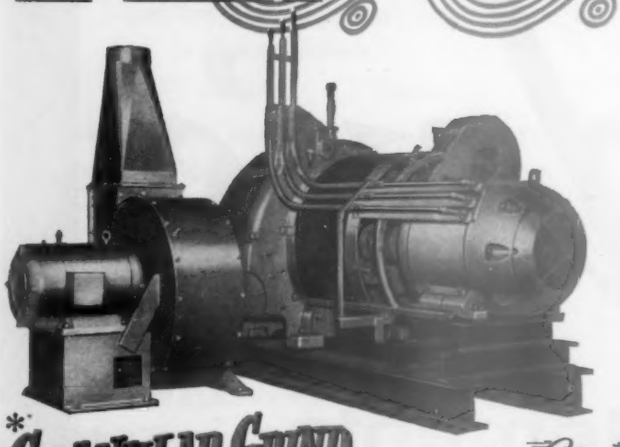

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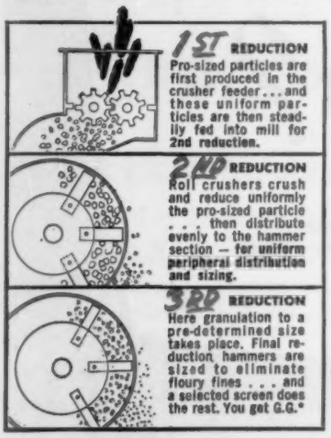

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the dollars spent on all other things become worth less than a cent on the dollar.

When a salesman does the correct things, sells well, represents his store adequately, then and only then, has the money spent on display, layout, advertising, and goodwill been invested well. The efforts of retail selling folks determine how much every other expenditure that their store makes is really worth. There is no substitute for good retail salespeople. They are the representatives of their store.

That salesman can lose not only that sale, but he can act in such a way as to lose that customer. The salesman can make the customer think, "I wish I'd never come in here." The salesman can make the customer think, "Brother, I'll not be caught dead in this place again." Losing the sale would be bad enough, but losing the customer is far worse.

In the final analysis, the salesman is the heart of the selling situation. At the point of sale, he represents all the efforts the store has made to bring the merchandise and the customer together. He is the representative of the store.

Each store owner and manager had best search his soul with a few simple questions. How carefully was that representative of the store selected? How well was he trained? How is he supervised and motivated? How often are his efforts evaluated? How much progress has he shown in the past six months? In the past year?

These are important questions because on the basis of the answers given to them, we can predict the amount of success the store will achieve through their representatives at the point of sale—the heart of retailing.

Glidden to Build Two Feeder Elevators

CHICAGO—Plans for construction of two 200,000-bu. feeder elevators, one in Lockport and one in Seneca, Ill., to supply grain to the Glidden Company's 6,500,000-bushel terminal elevator in Chicago were announced by Willard C. Lighter, Glidden vice president and general manager of the firm's chemurgy division.

To be erected at a cost of $200,000 each, the new elevators are scheduled to be in operation by the middle of September. They will receive soybeans, corn, wheat and oats by truck from dealers in surrounding areas and distribute these products via Illinois River barges to Glidden's grain terminal on the Calumet River in Chicago or to southerly locations.

Glidden's chemurgy division manufactures a wide variety of oilseed derivatives.

Pork Production in January Drops But Meat Output Is Up

WASHINGTON — Hog slaughter during January slacked off from the high December level but beef production increased with the result that total red meat production in January was 2,477 million pounds, 2% above the December total of 2,430 million pounds. This total was 13% above the 2,196 million pounds in January, 1955.

The crop reporting board of the U.S. Department of Agriculture has issued its monthly report on livestock slaughter and meat production which shows the hog slaughter in January totaled 8,060,200 head, 7% less than the December number of 8,638,800, but 18% greater than the 6,850,000 killed during January a year ago. Pork output for January totaled 1,061 million pounds, 7% below the December output but 12% above January last year. The average live weight of hogs killed during January was 235 lb., the same as for December but 7 lb. lighter than the average for January a year ago. The amount of lard rendered per 100 lb. of live weight of hogs slaughtered was 14.4 lb., the same as in December and compared with 14.3 lb. in January last year.

USDA figures show that January beef production totaled 1,229 million pounds, 10% more than December and 15% more than January a year ago. The number of cattle slaughtered for the month totaled 2,255,600 head which was 7% greater than the 2,112,600 head slaughtered in December and 8% greater than the number slaughtered in the same month last year.

January slaughter cattle averaged 984 lb. live weight. This was 12 lb. heavier than a month earlier and 37 lb. heavier than a year earlier.

The New England states, North Carolina, Florida, Kentucky, Arkansas, Oklahoma and Nevada killed fewer cattle than in January a year ago, while Pennsylvania, Tennessee, Alabama, Louisiana and Oregon killed the same. All other states slaughtered more cattle than during the first month a year ago.

January veal production totaled 115 million pounds, USDA reports. This was 2% higher than the December output and 1% higher than the corresponding month last year. Calves

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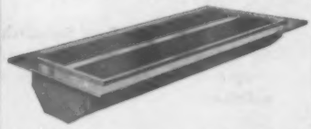


W-W Permanent Magnet

FOR FEED TABLE AND SPOUT INSTALLATION

You get 30% greater pull through this powerful magnetic separator than with any comparable magnet on the market. What's more, it's guaranteed forever. It saves you valuable down time and machinery damage because it snatches out iron particles and trash iron from material being processed. Protective casing prevents breakage and keeps dirt out. Available hinged or not hinged. Write for literature and prices. Terms usually arranged if desired.

W-W GRINDER CORP.
Dept. 311 Wichita, Kansas

"Snow-Flake"
OYSTER SHELL
★
SEE OUR AD ON PAGE 74

Rip-p-p ...and it's open!

Bemis RIPP-NIPP* Bag

Grasp tape here

TO OPEN Pull up Sharply!

Give your customers the time- and labor-saving benefits of Bemis RIPP-NIPP* in Bemis Multiwall Bags. They'll thank you for it... and RIPP-NIPP costs you nothing extra.

Get the details from your Bemis Man.

RIPP-NIPP—A small, closely controlled, machine-made nip cut in the bag at the edge near the sewn seam to start easy tear along the top. Does not weaken the bag.

*Trade-mark

BEMIS BRO BAG CO.

Bemis

General Offices—St. Louis 2, Mo.
Sales Offices in Principal Cities

CUT YOUR FORMULA COSTS

WITH CLINTON

C. F. S. CONCENTRATE...#3

The NEW, MORE ECONOMICAL source of unknown growth factors

Consists of corn fermentation solubles dried on corn by-products feedstuffs.

For detailed information write

Quality products
FROM THE WORLD'S CORN CENTER
CLINTON
CLINTON FOODS INC.
Corn Processing Division
CLINTON, IOWA

NATIONAL ALFALFA CONTEST—A vitamin A guessing contest was the feature of the National Alfalfa Dehydrating & Milling Co. exhibit at the recent Midwest Feed Manufacturers Assn. convention in Kansas City. Visitors were invited to guess the vitamin A content of two samples of alfalfa meal displayed in the bowls, above in the foreground. Analyses were run at Doty Technical Laboratories, and based on these results the winner on sample A was Pat McRoberts, McRoberts & Co., Muscatine, Iowa. Proving that she is doing a job beyond the requirements of the group she serves, Miss Eunice Hunt, secretary to Joseph Chrisman, executive vice president of the American Dehydrators Assn., was the winner of the second sample. Each received $10 in prize money. Shown above in the picture, left to right, are A. R. McFadden, National vice president; R. A. Blomfield, Blomfield-Swanson, Minneapolis; Owen Smith, Nutrena Mills, Inc., Kansas City, and Tom Grill, National Alfalfa, Kansas City.

slaughtered averaged 215 lb. live weight, which was 6 lb. heavier than the previous month and 2 lb. heavier than January the previous year.

Lamb and Mutton Output Up

Lamb and mutton production in January at 72 million pounds, was 18% more than a month earlier and 9% more than a year earlier. The number of sheep and lambs slaughtered during the month was estimated at 1,492,100. This was 14% above the December estimate of 1,308,900 head and 8% above the 1,376,500 head slaughtered during January, 1955.

Poultry slaughter in January, 1956, was 301 million pounds, ready-to-cook basis. Output was 30% less than December, but was 23% above the same month last year and 75% above the 10-year average for the month.

Commercial meat production figures reported by USDA include slaughter in federally inspected plants and other wholesale and retail plants but exclude farm slaughter.

Two Feed Scholarship Awards Announced

KANSAS CITY—Two new four-year scholarship awards for the feed technology course at Kansas State College were announced recently.

Recent additions include awards by Chas. Pfizer & Co., Inc., Brooklyn, and Feeds Illustrated, Prospect Heights, Ill. The scholarships represent contributions of $400 per year for a four-year period.

Formal presentation of the funds was made to Kansas State College officials during the recent convention of the Midwest Feed Manufacturers Assn.

ELTON

"D" SERIES CONVEYORS

A LOW COST LINE GIVING THE SAME RESULTS AS MACHINES COSTING HUNDREDS OF DOLLARS MORE. MADE IN SIZES FROM 11 TO 20 FEET.

SEND FOR THE NEW ELTON CATALOG

POWER BELT CONVEYORS
GRAVITY CONVEYORS
SPIRIAL CONVEYORS
BUCKET ELEVATORS
AND OTHER MATERIALS HANDLING PRODUCTS

CHANTLAND
MANUFACTURING COMPANY
BADGER, IOWA

SEEDBURO CLEAN SWEEP
Removes Dirt by the Ton!

DESIGNED FOR MANY USES

- INEXPENSIVE
- PORTABLE
- CLEANS:
  - Box Cars
  - Grain Cleaners
  - Bags
  - Customers Cars and Trucks
  - Dust and Dirt Anywhere

The one cleaner designed especially for the grain, feed, seed and other industries where accumulations of dust and dirt are a major problem. Seedburo Clean Sweep is inexpensive—It's portable, and it's simple to install and operate. Write for further details.

Five Models to Choose From

"World's Leading Supplier of Grain Testing Equipment for Over 43 Years"

SEEDBURO
(Seed Trade Reporting Bureau)
EQUIPMENT COMPANY
Dept. FS-3, 618 W. Jackson Blvd., Chicago 6, Ill.

Higher Vitamin Levels for Disease Resistance Studied

RALEIGH, N.C. — A report from the North Carolina Experiment Station tells of studies now being made to determine more exactly the amounts of various vitamins required to obtain maximum resistance to disease.

The report, by C. H. Hill and H. W. Garren, appeared in a recent issue of the station's Research and Farming.

Recent tests show that vitamin levels in poultry feeds sufficient to produce most rapid growth are not sufficient to give maximum disease resistance, the report said. Resistance to fowl typhoid has been increased by a mixture of all known vitamins, including vitamin C. This mixture was added to a ration already containing vitamins ample for rapid growth.

The report continues:

"Chicks fed a control feed were given a large number of bacteria causing fowl typhoid. Only 10% survived. When the level of vitamins was raised to 10 times that of the control feed and vitamin C added, 40% of the chicks given the fowl typhoid bacteria survived.

"Which vitamins were most important in bringing about this increased resistance? Additional research sought to find the answer to this question. The vitamins were divided into three groups—the water soluble B vitamins; the fat vitamins A, D, E and K; and vitamin C.

"The resistance of chicks to fowl typhoid was not increased by any of these vitamin groups fed alone, even though they were fed at high levels. The combination of the three groups did increase resistance.

"Further studies were carried out to find the vitamins which had to be included in the mixture. No protection was given the chicks when any of the fat soluble vitamins A, D, E or K were left out of the mixture.

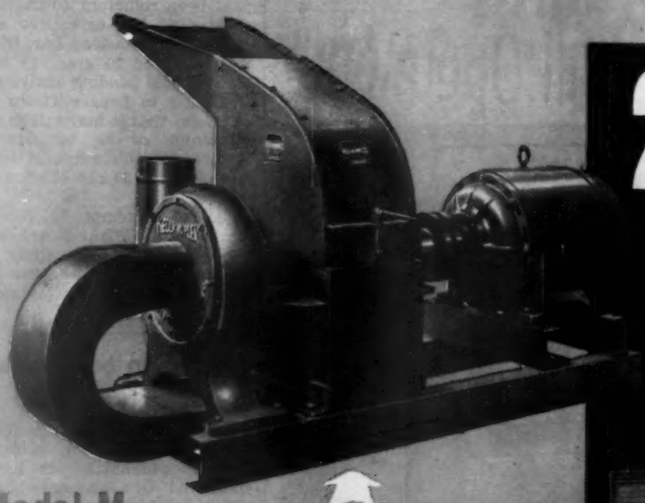
"Four B complex vitamins could be removed without affecting resistance. These were thiamine, biotin, folic acid and pantothenic acid. The reason some of these B complex vitamins could be removed without lowering

Ask for it by name

★ More protein
★ More Vitamin-B¹
★ Solvent Extracted Meal or Pellets

Minnesota Linseed Oil Company
Minneapolis 21, Minnesota

Minnesota 36% PROTEIN LINSEED MEAL



2 great KELLY DUPLEX HAMMERMILLS

backed by an ironclad performance guarantee *

Model M . . . A heavy duty, all-welded steel model designed for the 50 to 75 HP class. It gives you a grinding efficiency unsurpassed in the many competitive tests made . . . lower power consumption . . . steady, dependable performance . . . and long life. Screens can be changed quickly without raising mill cover. Other features include swing type hammers—large, rugged blower housing—special, oversized shaft and bearings—sturdy, one-piece alloy steel fan—oversize blower—and heavy steel mill body.

Model S . . . A larger, wide throat mill designed to meet requirements in the 75 to 125 HP class. Has all the same outstanding construction and performance features as the Model M, including the same unsurpassed grinding efficiency and lower power consumption. Both of these outstanding hammermills can be furnished with a direct connected motor with flexible coupling, mounted on an all steel base as one unit—or simply with a sheave for V-belt drive.

* We unconditionally guarantee that a Kelly Duplex Hammermill will grind more feed with the same power, conditions being equal, than any other hammermill on the market.

If you are not completely satisfied, you are free to return the machine within 30 days after arrival at destination, by prepaid freight, for refund of full purchase price.

Mail Coupon Today for complete information

THE DUPLEX MILL & MANUFACTURING CO., Springfield, Ohio

FIRST CLASS
Permit No. 72
(Sec. 34.9 P.L.&R.)
SPRINGFIELD, OHIO

BUSINESS REPLY ENVELOPE
(No postage necessary if mailed in the United States)

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Springfield, Ohio

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FOLD OVER ON THIS LINE — FASTEN (STAPLE, GLUE, TAPE)

THE DUPLEX MILL & MFG. CO.
SPRINGFIELD, OHIO

Yes, I'm interested in the KELLY DUPLEX machinery checked at the right. Please send me full information on these machines without any obligation.

- ☐ Model "S" Hammermill
- ☐ Model "M" Hammermill
- ☐ Vertical Screw Elevator
- ☐ Vertical Feed Mixer
- ☐ Forced Air Carloader
- ☐ Twin Molasses Mixer
- ☐ Chain Drag
- ☐ Electric Truck Hoist
- ☐ Corn Sheller with Blowers
- ☐ Corn Crusher—Regulator
- ☐ Pitless Corn Sheller
- ☐ Grain Blower
- ☐ Regular Corn Sheller
- ☐ Corn Scalper
- ☐ Magnetic Separator
- ☐ Attrition Mill
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- ☐ Grain Feeder
- ☐ Corn Cutter and Grader
- ☐ Electric Bag Cleaner
- ☐ Complete Line Catalog

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FIRM _____

CITY _____ STATE _____

LILY WHITE BAGS that stay put!
Brother, they're not only rough...they're SUPER RUFF to stack high and stay put.
ARKELL and SMITHS
CANAJOHARIE, N. Y. • WELLSBURG, W. VA. • MOBILE, ALA.
A/S

disease resistance was probably because the control feed itself contained large amounts.

"Vitamin C is not usually needed in poultry feeds. However, when vitamin C was left out of the vitamin mixture, no increased resistance was obtained. It is possible that under disease conditions the chick does not make enough vitamin C to supply its needs.

"Since vitamin C is an antioxidant, it is possible that other antioxidants such as DPPD (diphenylphenylenediamine), which are now used in poultry feeds, would take the place of vitamin C in increasing the resistance of chicks to fowl typhoid. Studies carried out to date show that DPPD evidently can replace vitamin C in the vitamin mixture.

"Studies are now being made at State College to determine more exactly the amount of each individual vitamin required to obtain maximum resistance to disease. The effect of vitamins on other diseases such as Newcastle disease and bronchitis will also be studied."

Control Official Says Corrective Measures To Be Applied More

LITTLE ROCK, ARK.—Henry DeSalvo, head of the feed, fertilizer and pesticide division of the Arkansas State Plant Board, recently announced plans to "apply all corrective measures when such actions seem necessary to bring feeds into compliance with the provisions of the state feed law."

Mr. DeSalvo, in a statement in the Arkansas State Plant Board News, said one of the state farm organizations recently was critical of feed mills for "frequency with which their feeds fail to meet the guarantees," and the organization suggested that the feed law be amended to provide more drastic penalties for continued violations. "The records seem to indicate that some mills warrant such criticism," Mr. DeSalvo said.

Mr. DeSalvo said: "Perhaps the Plant Board is at fault to a considerable extent, for the board has in the past been reluctant to use the more drastic of the corrective measures provided in the feed law. The measures referred to are: (1) holding a feed off-sale pending analysis if there is reason to believe (from previous analysis) that it may fail to meet the guarantee or be adulterated; (2) seizure and public sale of feed found in violation; (3) cancellation of registration.

"In an attempt to correct this situation, the Plant Board will hereafter not hesitate to apply any and all of these measures when such actions seem necessary to bring feeds into compliance."

Jacobson to Sponsor Feed Scholarship

MINNEAPOLIS — A feed technology scholarship at Kansas State College, Manhattan, is now being sponsored by Jacobson Machine Works of Minneapolis, according to an announcement from Ralph M. Jacobson, sales manager of the firm.

The scholarship board at the college will select the student to receive the scholarship.

Mr. Jacobson said that officers of the company consider aid to worthy students a valuable step in maintaining well qualified men in the feed industry.

BUSINESS CHANGES HANDS

GALVA, IOWA—The Grell Implement & Feed Co. has been sold by Fred and Jim Grell to the F&M Implement Co., which will continue to operate the business.

Nutritionists! Mill Managers! Mill Operators!

Now—your ANSWER in one bag!

Solve problem of wastage...time loss...space shortage...through

PETER HAND'S STANDARD PREMIX PROGRAM

Convenient and economical. Each batch-size 5- or 10-lb. package provides Vitamins, antibiotics and DPPD to fortify one ton of high-quality feed

NEW AND IMPROVED...
Peter Hand Starter
Peter Hand Grow & Lay
Peter Hand Grow-Lay-Breeder
Peter Hand Premix-Turkey
Peter Hand Premix-Duck
Peter Hand Premix-Pig

You will have better quality control and less worry about the quality of your feeds with Peter Hand Standard Premixes. Eliminate dangerous under fortification and costly overfortification because Peter Hand Standard Premixes provide the correct fortification for every feed.

Only the highest quality, full potency vitamins and other feed additives are used in Peter Hand products to assure maximum compatibility, stability and biological availability.

Why not let the Peter Hand Research Staff, Laboratory and Research Farm give you these *economies and product control* with its know-how and experience. Use Peter Hand Standard Premixes—products of "Progressive Nutrition"

PETER HAND FOUNDATION
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CUSTOM PREMIXES—TO YOUR SPECIFICATIONS AVAILABLE WITH SAME RIGID CONTROLS

Whitmoyer KEMITRACIN

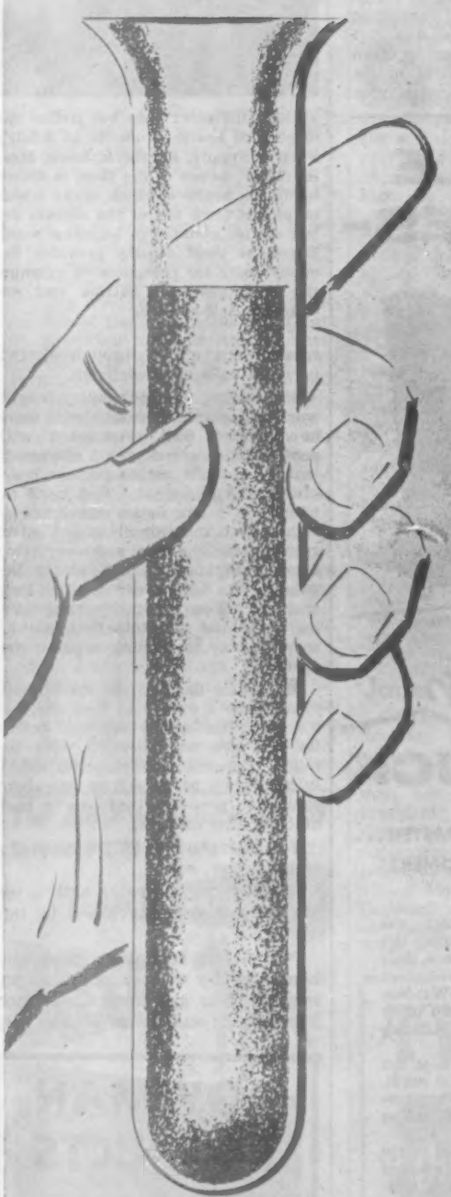
the purified ANTIBIOTIC complex—that does your feed antibiotic job better!

Send for complete scientific data.

WHITMOYER LABORATORIES, Inc.
MYERSTOWN, PENNA.

For Finer Packaging
Look to Fulton BAG & COTTON MILLS First

HOW AVAILABLE IS *YOUR* PHOSPHORUS?



Findings to date prove that a supplement showing high phosphorus solubility in all these chemical tests can be correlated with good biological availability.

HOW DOES YOURS RATE?

YOUR SUPPLEMENT	CDP 17%	Analytical reagent grade dicalcium phosphate	Phosphorus extracted by
PERCENT	PERCENT	PERCENT	⬇
	99.8	100	0.4% HCl
	95.1	97.7	2.0% citric acid
	93.5	99.5	neutral ammonium citrate

No *one* solvent is entirely dependable in measuring the availability of phosphorus supplements. Conclusions drawn by researchers point out that high solubility in *only* 0.4% *HCl* does *not* indicate a high feed utilization.

CDP shows high availability in all *three* determinations, confirming excellent results in a variety of feeding tests.

The lowest cost, quality phosphorus product, CDP (Coronet Defluorinated Phosphate) is produced in two grades to meet your requirements.

	17% P Grade	14.5% P Grade
Phosphorus, Total	17.0% min.	14.5% min.
Calcium, Total	34.0% min.	34.0% min.
Fluorine, Total	0.17% max.	0.145% max.

Let us figure the cost of CDP Delivered to Your Plant

CDP Coronet Phosphate Company
NORFOLK 1, VIRGINIA

A DIVISION OF SMITH-DOUGLASS COMPANY, INCORPORATED SD SMITH-DOUGLASS

Displays, On-the-Farm Calls

Remind Customers

Of Health Products Needs

By Al. P. Nelson

Farmers who do business at Adair's Feed & Supply, Reinbeck, Iowa, invariably have idle time while waiting for their orders to be filled and find their way into the firm's retail sales room.

There, prominently displayed on shelves beneath a wide counter, is a large stock of animal health products. Merlin Adair, owner of Adair's Feed & Supply, states that farmers can't help but see the large display and often are reminded of a product they need, whether it is hog wormer, dip, fly spray or lice powder.

"A good display helps sell more health products," states Mr. Adair.

This feed dealer says that he sells a great deal of pig and poultry wormer in liquid form. Farmers seem to like the easy way in which it can be handled. It is easy to sell, too, for this very same reason. No matter how busy a farmer may be with a crop or harvest schedule, he always can spare the time to put the liquid wormer into the proper spot for poultry and hogs, and dilute it properly.

The same is true with stock spray. When this item is displayed conveniently during the season when it is needed by farmers, it also will promote impulse sales.

"That's why I display sanitation products at the office counter," reports Mr. Adair. "They sell themselves in many instances, but when I get a chance to talk to a farmer while I'm making out a bill for feed, etc., I mention sanitation products. Often I sell some in just that way."

This feed dealer carries a stock of sanitation products of about $700 most of the time. He finds that a convenient display spot for the line really aids in the sales. He states that the average farmer is becoming more conscious than ever before of the value of poultry and livestock sanitation in cutting down disease and promoting efficiency and he is willing to buy. By his own experience, as well as the experience of other farmers, he knows that animal sanitation pays, that it reduces disease loss. But in the press of other matters he often forgets to buy the products unless the alert dealer and his employees remind him, either through display, personal calls or advertising.

FARMERS can't help but notice the display of health products at Adair's Feed & Supply, Reinbeck, Iowa. Merlin Adair, owner of the firm, is shown holding a bottle of stock spray which he picked from out of the shelves below a wide counter in his sales room. Excellent shelf display provides the opportunity for prospects to examine the packages and bottles and encourages self-service.

Mr. Adair also does poultry service work in his area. Through such work he becomes well acquainted with poultry raisers and gets a chance to look over their entire poultry operation. "By getting this first hand information I can make recommendations, show the farmer why I advocate certain changes, and very often I get a big feed order," states Mr. Adair. "A dealer can really keep track of his customers by doing service work and maintain that contact so necessary to holding regular customers."

Mr. Adair likes to use direct mail about once a month to feed users in his area. His letters are well gotten up and are not crowded with too much information. Each letter usually contains a paragraph or two about sanitation products that can be used at that time of year.

For example, part of the copy of a recent letter, said:

"Free—a pig castrator with a ton of any hog feed purchased in this month.

"Our latest sanitation items are: Liquid poultry wormer and liquid pig wormer. They are doing a real good job. Come in and see us. We can help

You get more than a bulk truck at

SPROUT-WALDRON

You get many *plus* values when you deal with your SPROUT-WALDRON MAN. He has America's most complete line of feed milling equipment, and can afford to be entirely unbiased in his recommendations.

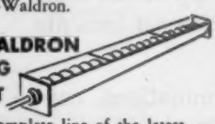
You also get on-the-spot guidance on the installation of all necessary auxiliary equipment for a complete bulk feed delivery system, including properly designed bins for your customers.

Chuck Johnson

Your SPROUT-WALDRON MAN is thoroughly trained to help solve your problems. He's practical, sincere, willing, and anxious to help you increase your profits year after year. And being one of a team, he has access to the accumulated experience of the entire Sprout-Waldron sales and engineering staff.

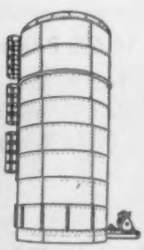
Chuck Johnson, pictured here, spent almost ten years in the engineering departments of Allied Mills and Quaker Oats before joining Sprout-Waldron as a sales engineer seven years ago. His customers can attest to the great amount of assistance they receive from Chuck. With such men to help you, you're bound to buy *right* at Sprout-Waldron.

SPROUT-WALDRON CONVEYING EQUIPMENT



You'll find a complete line of the latest, most improved belt, screw, and drag conveyors that move feeds horizontally, vertically, and on an incline at Sprout-Waldron . . . as well as everything for bucket elevator installations.

HARVESTORE STORAGE STRUCTURE



Ideal for the storage of hard-to-handle feeds and bulk feed ingredients. It is flexible, economical to install, movable. Walls are glass-surfaced steel. Bolted and sealed construction throughout. Mechanical sweep-arm bottom unloader discharges from flat floor surface. Stored materials are withdrawn easily, even when they tend to pack or bridge. Unloader can be installed in existing bins or silos.

SPROUT-WALDRON PNEU-VAC

This is the most advanced negative-pressure or draw-through system. Fan is located on opposite side of collector from material conveying line. Material does not pass through fan. Mechanical friction and exterior dusting are eliminated. The unit is self-cleaning. Materials can be routed anywhere you can run a pipe. There is a minimum of moving parts.

SPROUT·WALDRON

SW

FOR PROFITABLE BULK DELIVERIES—

SPROUT-WALDRON FEED PIPER

pneumatic

BULK TRUCK

PIPES FEEDS HIGHER, FARTHER, FASTER . . . AT LESS COST — SERVES ALL CUSTOMERS

Are you prepared to profit from the new shift in the feed market . . . the swing to PIPED-IN FEEDS? More and more feeders are demanding this modern service. It saves their money, their time, their storage space, their feed . . . cuts their work . . . and provides greater cleanliness.

Feed millers who meet this demand now with the Sprout-Waldron *Feed Piper* trucks are winning new customers, holding old ones. They're increasing their sales volumes of feeds and at the same time reducing their costs of bagging, handling, and warehousing sacked feeds.

The *Feed Piper* truck unloads by air. Its flexible steel hose has almost unlimited "reach" and "lift" for practically all normal needs. You can fill the most out-of-the-way bins quickly, easily. When permanent piping is installed to farm bins, feed is delivered as easily and as dustless as fuel oil.

Multiple compartments permit different feeds to be carried in the same load without intermixing. In unloading, there is no separation of light and heavy materials, and a minimum of particle breakage. Contamination between loads is eliminated.

Feed Piper trucks have a minimum of moving parts . . . fewer than trucks that unload mechanically. Maintenance is low. There are no screws or augers to cause trouble. All the mechanism is on the truck body.

A SELF-LOADING DEVICE is optional equipment with the *Feed Piper* truck. It can draw grain or feedstuffs from the feeders' bins, securing payloads for return trips. It can unload feed or grain from railroad cars and, if desired, blow the load into other trucks. Many other adaptations are possible with the self-loader.

The *Feed Piper* truck is available in a range of models with your choice of chassis. *Designed and built by Sprout-Waldron's milling and pneumatic engineers,* it's the industry's most advanced equipment for PIPED-IN FEEDS. Ask your SPROUT-WALDRON MAN or write for full details.

**FEED PIPER, PIPED-IN-FEEDS are trademarks of Sprout-Waldron*

SPROUT-WALDRON

The Best in Milling Equipment Since 1866

61 LOGAN STREET • MUNCY, PA.

Exclusive Canadian Distributors: Strong-Scott, Limited, Winnipeg

PELLET MILLS • HAMMER, ROLLER, ATTRITION, and BURR STONE MILLS • MIXERS • SCREW, BELT, and PNEUMATIC CONVEYORS • BUCKET ELEVATORS • CUTTERS, CRUSHERS, and FEEDERS • REELS, SEPARATORS, and ASPIRATORS

300

BOWMAN PRODUCTS

VIANOL
Oil soluble vitamin protector and pigmentation aid.

BoA-S and Bo-A
Stable dry vitamin A products.

BoDEE
Vitamin D-2 or D-3 in dry, oil or water dispersible forms.

BoDEE (Mineral) STABLE VITAMINS D
Vitamin D that will not decompose when combined with minerals.

XANTHOPHYLL CONCENTRATES
For better poultry pigmentation.

HYDROPOID
Dry, free-flowing partially hydrogenated animal fat.

CLOROFOLEN
Effective dog food deodorant.

Bowman Feed Products, Inc.
130 Central Ave., HOLLAND, MICH.

you make more profit from your meat, milk and eggs."

There is still another way in which Mr. Adair promotes the sale of sanitation products. He owns a large two-story building adjacent to the rear of his feed store. In that building he is raising 600 laying hens. Some are cage layers and some are not. But Mr. Adair takes very good care of the laying flock and they are excellent producers.

Thus when a poultry farmer asks what products are effective as disinfectants, wormers, etc., Mr. Adair can give them an answer based on personal experience with a sizeable flock. Sometimes he takes farmers to see the flock, and he likes to do this, because he is then able to talk sanitation products, feeds, management, etc., on the spot. The farmer, because he likes to look at chickens, will absorb more information at a time like this than in the store, Mr. Adair believes.

Mr. Adair also uses the laying flock to discover just what it costs the farmer to produce a dozen eggs. During September and October, 1955, he kept accurate records and found that his feed costs for producing a dozen eggs, with some layers in cage, was 14¢. The cost of producing a dozen eggs from hens not in cages was 17¢ for the feed. Not included were housing, sanitation, equipment and labor costs.

"Very few farmers will go to the trouble of finding out the exact cost of producing a dozen eggs in their flocks," says Mr. Adair. "They are surprised when I show them my figures. But I do know that farmers can now make a reasonable profit producing eggs, and that helps me convince them they can afford more for proper sanitation measures, too."

During the year, Mr. Adair stages special feeder meetings on poultry, hog and cattle feeds. At these meetings, he usually mentions the sanitation products which should be used with farm animals and poultry. Women who raise poultry are especially interested in sanitation products, he states.

Mr. Adair staged an interesting dinner meeting in the fall of 1955 for cattle feeders. He had been to Canada on a hunting trip and bagged a big moose. He sent cards to 175 cattle feeders, inviting them to a moose dinner at the local Memorial Hall. A large crowd of farmers attended, many of whom had never tasted moose meat. After the dinner there was a talk on cattle feeds and a movie.

Program Announced For April Meeting of Feed Microscopists

TERRE HAUTE, IND. — The program for the fourth annual meeting of the American Association of Feed Microscopists to be held April 9-11 here has been announced. The Hotel Deming and the Chas. Pfizer & Co. Research Center near Terre Haute will be the sites for the meeting.

Included on the program on April 9 are Dr. M. M. McMasters, cereal crops section, U.S. Department of Agriculture, Peoria, Ill., who will speak on the microscopic identification of cereal grains; Dr. H. W. Titus, director of the Limecrest Research Laboratories, Limestone Products Corp., Newton, N.J., who will talk on the properties and processing of mineral products, and Dr. Howard O. Sturgis, director of the National Fisheries Institute, industrial products division, Washington, D.C., who will discuss marine products.

Dr. J. L. Krider, vice president, McMillen Feed Mills, Ft. Wayne, Ind., will talk on future trends in feed formulation at the annual banquet the night of April 9.

The April 10 program includes a tour of a brewery and of the Chas. Pfizer & Co. Agricultural Research Center. Lunch will be served to the group at the center after which Dr. Herbert G. Luther, director of the center, will talk on Pfizer research. R. C. Wornick, Pfizer's agricultural research and development department, will talk on animal feed supplement formulation.

A session on microscopic methods is scheduled to take most of the afternoon.

A business session on April 11 will wind up the meeting.

Joins Ad Agency

CHICAGO — Dancer-Fitzgerald-Sample, Inc., Chicago advertising agency, has announced that R. O. Archer, veteran farm advertising man, has joined their staff, as vice president. Mr. Archer recently resigned as vice president and account supervisor of Ruthrauff & Ryan, Inc., where he was supervisor on the A. E. Staley Manufacturing Co. (Soybean Division) account. Mr. Archer began his farm advertising career with Wade Advertising Agency, Chicago.

The most complete line of DOG FOOD ingredients from ONE source

BOXER BRAND

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Some Little Known Causes Of Livestock Losses

By Dr. A. A. Case
University of Missouri

EDITOR'S NOTE: Often when livestock are poisoned or go off feed, the formula feed or supplement a producer is feeding gets the blame. In the accompanying article, Dr. Case, a professor of veterinary medicine and surgery at Missouri, points out that many times when a feed is blamed, there actually is nothing wrong with it. He cites instances where certain farm plants, the water supply or other environmental factors were to blame for livestock losses. He advises feed men to get help from a veterinarian in solving such complex problems. The article is the text of a talk Dr. Case presented at last fall's Missouri Feed Conference.

* *

It will be impossible to consider all the known or common causes of losses in farm livestock in the scope of a paper such as this. However, there are several conditions immediately concerned with trouble which can result from the ration of farm animals. The ration may be lacking in some essential thing or it may contain an excess of certain ingredients.

Again, the ration may have adequate balance in all known essential ingredients but its use by the animals is impaired by some other environmental factor such as the water supply, or even the housing conditions and the weather. Contamination of the ration with a number of bacteria, molds or chemicals not ordinarily included in the ration can cause all kinds of trouble, under the right circumstances.

The seeds of certain poisonous plants, if included in any part of the ration can impair its efficiency, lower the actual feeding value, or even make it definitely toxic to animals eating the ration. Such plants vary all the way from those which are wholesome forage plants that set poisonous seeds to plants which are constantly poisonous in all their parts.

Some of the plants may be wholesome at one stage in their growth and deadly poisonous at another. Such a plant is Sudan grass.

Another is the corn plant which is usually an excellent forage plant and is one of the basic grain producers, yet under drouth conditions which prevailed last fall, it was about the most poisonous plant for cattle that grew on the average farm. The same can be said of several of the most nutritious legumes, including alfalfa and lespedeza.

It would be nearly impossible for many farmers to use diversified farming as they do without use of small cereal grain pasture. Rye, wheat, oats and barley have enjoyed wide use, but all these crops have, on certain premises, caused trouble with one or more kinds of livestock.

In the fall of 1954 wheat had high nitrate content, much higher than usual, and caused acute bloat in cattle. After severe freezes, oats, barley and rye caused trouble as well as the wheat. Part of this trouble came from injudicious use of the pastures by active and hungry animals, which resulted in overloading and acute indigestion. This could have been prevented in many instances by the use of any kind of hay along with the lush and fast growing pastures.

The same could be said of fescue which may be troublesome if the animals are eating it to the exclusion of all other feeds. There are a few farms in Missouri where there is a real fescue problem, but even on these farms the use of a balanced ration with proper supplementation of the pasture helps prevent the trouble. As a rule, mixed pasture stands have been far less troublesome than pure stands, regardless of the plant under consideration.

Feed Often Blamed

Many times a commercial feed or supplement has been blamed for being inadequate, unbalanced, or otherwise faulty when there was actually nothing wrong with the feed. The trouble was in the management of the ration or some factor such as high nitrate content in the hay or silage.

Even water may complicate the situation. Some examples will illustrate this point. On one farm swine suddenly went partially off feed, developed lameness and other alarming symptoms. The basic condition seemed to be similar to, if not identical with, rickets. The ration contained as much vitamins A and D as any other in common use but the water on this farm was very hard. With the minerals that were also being fed the result was an imbalance of the ration.

It is always a good idea to keep the water supply in mind when unusual trouble with a ration is cropping out in situations where one should not expect to see it.

Another instance occurred with beef cattle, where alfalfa and silage (both of excellent quality) were the basic parts of the ration, with a commercial complete mineral supplement also being used. Calves were born with hearts beating but they were unable to start breathing. When it was recognized that these calves were suffering from methemoglob-

(Continued on page 92)

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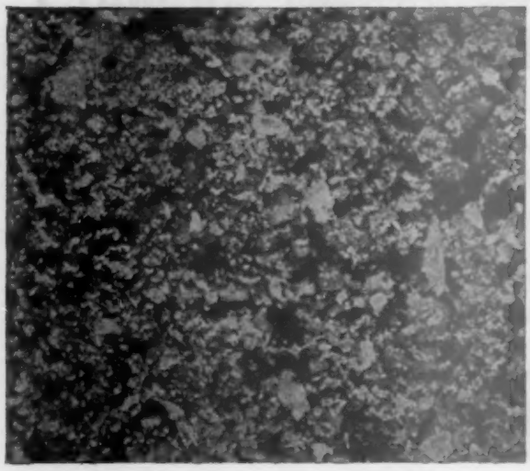

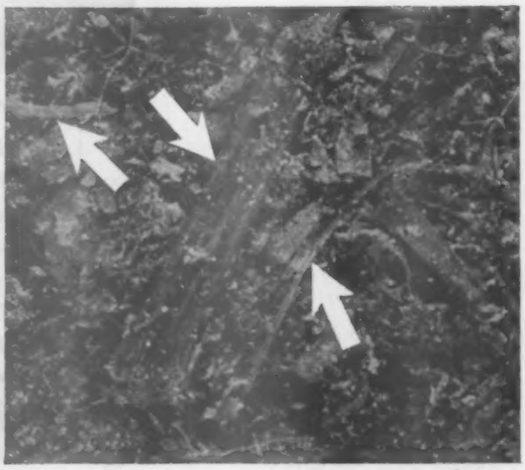

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Influence of Disease on Nutritional Needs Discussed at Rutgers School

NEW BRUNSWICK, N.J. — The question of whether chickens that are sick with infectious diseases should get extra or special rations, came in for discussion at the recent school for poultry servicemen at Rutgers.

The discussion developed as a result of a talk reviewing research on the influence of disease on nutritional requirements.

The school was attended by 110 men, mostly from feed companies and allied businesses.

Dr. Hans Fisher, nutritionist in the Rutgers poultry department, gave industry men a composite picture of research done at several institutions. He reported, for example, that one investigator found that during periods of starvation, many parts of the body are broken down, but the antibiotics —organisms that fight harmful disease—stay alive longest to fight any disease germs that try to get in.

Another worker said that a supplement that is too one-sided can harm a bird because of the extra burden placed on the digestive system.

According to Dr. Fisher, a poultryman is beating his head against the wall when he forces birds to eat more than they normally would during a disease outbreak. It may even be wisest to decrease the feed intake when germs invade the flock, he said.

Dr. Fisher said there is little hope of improving resistance by improving the ration above normal. Work indicates, he said, that it's best to supply all nutrients at a balanced level so there will be no inter-action between infection and metabolism.

During the question-answer period that followed, Dr. Fisher stated that feed men often add more of an ingredient to a feed at the insistence of the poultryman who "feels" that the addition will do some good because apparently it did some good in the past. Unfortunately, he said, poultrymen are not inclined to conduct controlled experiments, and a pen of chickens that recovered after an extra amount of something might have recovered anyway.

Also during the discussion, it appeared that some of the servicemen interpreted Dr. Fisher's remarks to apply to stress ailments, rather than to the viruses, bacteria and similar organisms that he was talking about.

Prof. Clarence S. Platt, chairman of the poultry department, said that he had been informed that in Denmark during the war, when chickens as well as men were on a next-to-starvation diet, poultry diseases dropped to almost nothing. After the war, there was more disease, but there were also more chickens, and so the Denmark experience really was not conclusive.

Digestive Apparatus

Dr. Harold S. Weiss, physiologist, reviewed the digestive apparatus of chickens and described his experiments in removing the crops from a group of young chicks. These birds have now grown up and seem to be doing as well without their crops as normal birds are with their crops intact. He concludes that the crop has a function mainly of storage. Most digestion seems to take place in the intestines.

Scientists are wondering if antibiotics have a nutrient as well as a disease-fighting function, Dr. Weiss reported. He mentioned elaborate experiments at Notre Dame University, where animals are raised in

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germ-free surroundings. Apparently some of these, with no germs to fight, make growth gains when they are fed antibiotics. Results are still not conclusive.

Dr. Paul D. Sturkie, reporting latest developments in his work on heart trouble and blood pressure in chickens, said that chickens with abnormally low blood pressure seem to have a higher death rate than those with high pressures. He expects to make further tests on a larger sample.

Dr. Sturkie raised the question of selective breeding to get rid of strains which show abnormally high and abnormally low pressures if it is found that these tendencies are inheritable. He said he'd like to see some large breeder tackle the problem.

One of the aims of his research is to see if birds can be made to live longer. A flock with a productive life of only a few months more could make a decided difference in a poultryman's income.

Dr. Fred R. Beaudette, chairman of the department of animal pathology, noted an increase in parasites and blamed much of this to reuse of old litter. The round capillary worm that is being found to an increasing extent is "vicious," stated Dr. Beaudette, and there is no effective treatment beyond sanitation measures.

Sinusitis in turkeys is hard to distinguish from psittacosis. Still relatively rare in New Jersey, it's better known in other states, and Dr. Beaudette suggested that turkey growers should think before they bring in poults from infected areas.

Dr. Ordway Starnes, assistant dean of the College of Agriculture, reviewed the research program of the experiment station, and pointed out that new work has been started in poultry marketing, and noted the need for more research in breeding.

Prof. Platt told the group about tendencies in teaching and research at Rutgers. The aim now, he stated, is to turn out poultry scientists, rather than poultry husbandmen, and for this reason, students are getting heavier doses of subjects such as physics and chemistry, and less of the "practical" subjects, which are taught adequately in the short courses.

Speaking of pigeons, Prof. Platt said the potentials of the squab industry are "tremendous, just waiting to be opened up."

John Bezpa, extension poultry specialist, reviewed some of the problems met in the field and said that some of the feed problems can be minimized by impressing upon the poultryman that he himself is the key factor in the success of his farm. Servicemen can help, he stated, by getting poultrymen off to a good start by following good feeding and management programs.

Chairman of the morning session was J. C. Taylor, extension poultryman, and of the afternoon meeting, Dr. Robert K. Ringer, new specialist in poultry marketing.

New Pasture Grasses Now in Seed Project

WASHINGTON—Starr millet and Potomac orchard grass, two new forage-crop varieties, have been included in the National Foundation Seed Project in an effort to make certified seed of these superior grasses rapidly available to growers, the U.S. Department of Agriculture has announced.

These two grasses, the 16th and 17th new forage varieties to be accepted by the NFSP during its seven-year history, are both outstanding for pastures, USDA reports.

Starr, rated one of the best of all summer annual grazing crops for dairy and beef cattle on the lighter soils of the Southeastern Coastal Plains, is expected to replace sudan grass and common millets as seed becomes available.

Potomac will be recommended in several states from Connecticut to North Carolina and as far west as Illinois and Iowa. It is about three days earlier in maturity than commercial orchard grass varieties, has superior persistence, and is resistant to rust disease. Additional information on the performance of these two new forage-crop varieties is available from State Agricultural Experiment Stations.

S. T. ALBAUGH DIES

NAVARRE, OHIO—Samuel T. Albaugh, 69, died here recently. He retired six years ago as owner of the Bixler & Albaugh Feed Mill in Navarre. He is survived by his widow, a sister and two brothers.

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LIVESTOCK LOSSES

(Continued from page 88)

inemia, examination of the ration showed it to be high in nitrate content. Blood serum vitamin A analysis revealed the cows which lost calves were either marginal or too low in vitamin A content of their blood for the particular time of year.

This was a case of deficiency in the apparent presence of plenty, a condition that is probably far more prevalent than is suspected. Some research findings seem to bear out the possibility that this problem can affect sheep as well as cattle. The answer in herds under observation has been to sharply increase the vitamin A and D intake, to increase the carbohydrate intake, and also where possible, reduce the nitrate content to known safe levels.

Here is another example of what can happen to a good commercial ration, under farm conditions. A large group of feeder steers of an apparent superior quality did well until efforts were made to put them on full feed. Then they broke out with enteritis and other disturbances of good health. The owner switched supplements and again the steers failed to "take" increased feeding. The farm stored corn was very heavily contaminated by rodent excreta, and was badly insect damaged. Some of it was moldy. Yet, the owner considered this "fair" corn.

Salmonella (paratyphoid) bacteria were readily isolated from the corn and Pseudomonas bacteria from the ill animals. Also, the steers had grazed Jimson weeds far in excess of the safe amounts of this toxic weed. The supplement was blamed because it was the thing being added just at the time trouble was encountered and this is very often so. Sick animals cannot take full feed.

Other forms of contamination which can happen anywhere from the mill to the farm, but for which the feed will surely be blamed by the farmer, are the highly poisonous chemicals now in common use for many agricultural purposes, from the treating of seed corn to the actual inclusion in the ration of certain animals for specific purposes. Chlorinated napthalenes which caused so much trouble a few years ago by producing hyperkeratosis in cattle is an example. Feed cannot even be stored within the same building with some of these chemicals without danger of contamination.

Another practice which comes under "asking for it" is the grinding of such poisons as aldrin or dieldrin or paint pigments through the same mill into which animal feeds are likely to go. Coccidiostats can really cause all kinds of trouble if they gain entrance to hog or dog food products, and they would be a definite hazard in cattle or sheep feeds.

Certain hog feeds are best used only for hogs. Disinfectants, especially phenol derivatives, do not belong in the rations of any animal, and especially not any hog ration. The same could be as true of some of the potent weed seeds, such as corn cockle, cow cockle, cockleburrs, castor beans, croton and spurges.

Molds used to be considered harmless but this idea certainly has to be revised in the light of recent research. Some of the molds are deadly in their own right and others produce hyperkeratosis-like conditions, especially in cattle.

Contaminated Grain

The larger mills and processors are usually careful about such contamination, but there is still considerable grumbling just at present concerning the newer and stricter "clean grain" regulations reducing the amount of rodent feces and insect damaged grain allowed in interstate traffic where the grain is designed for human food. It is recommended that this dangerous stuff be used for animal feed! As a rule, such contaminated feeds are not cooked before feeding to the animals, although there may be as good reasons for doing so as for man, as far as infectious diseases go.

The main point is that at best, the feed manufacturer may be unjustly blamed for inferior or even dangerous products. If deliberate inclusion of the aforementioned low quality or trashy, sometimes actually dangerous, ingredients into a livestock ration is made, let us say that it was not the feed manufacturer and dealer who made such a recommendation.

As far as the feed dealer is concerned, one of his best helpers on many problems of this kind is the competent, graduate veterinarian. Very often it will take both the feed dealer and veterinarian, plus all the outside help they can call in, to "break the case" and correct the trouble. These problems are almost never simple and some of them are very complex in nature.

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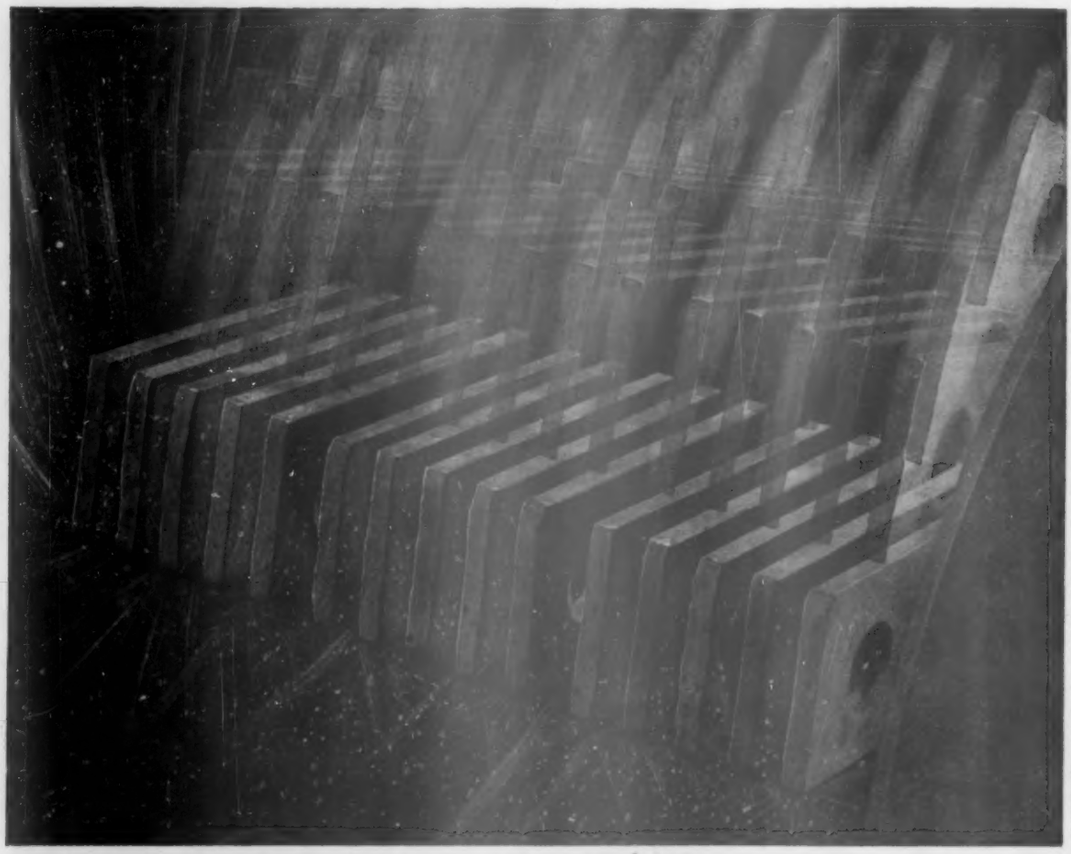

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The devil was always challenging St. Peter to a game of baseball, but St. Peter never took him up. Finally, the Dodgers, the Giants and the Yanks all went to heaven. So naturally St. Peter called up the devil.

"Now I'll play you that game of baseball," he said.

"You'll lose," said the devil, "you'll lose."

"Oh, yeah?" replied St. Peter. "Right now I've got the greatest collection of baseball players you ever saw."

"You'll lose," said the devil. "You'll lose!"

"What makes you so sure we'll lose?"

"Because," laughed the devil, "we got all the umpires down here."

◆ ◆ ◆

And many a man who proposed on his knees, has spent the next 10 years trying to get back on his feet.

◆ ◆ ◆

A little girl was spending her first night away from home. When it began to get dark she commenced to cry. "Why, dear," said her hostess, "what is the matter? Are you homesick?"

"No," was the reply, "I'm heresick."

◆ ◆ ◆

In the grammar class, one day, the teacher wrote on the blackboard: "I didn't have no fun at the seaside."

Then she turned around to her pupils and said to one: "Roland, how should I correct that?"

"Get a boy friend."

◆ ◆ ◆

Two farmers, leaving a political rally, carried away divergent opinions on the candidates. "Right fine speech the Senator made, don'tcha think?" one remarked.

"'Tweren't bad," observed the other, "but an hour's good rain woulda done us a heap more good."

◆ ◆ ◆

"Tell your story," said the judge to the hillbilly.

"Well, yore Honor, I was in a phone booth a-talkin' to my girl when this guy wants to use the phone. He opens the booth, grabs me by the neck and throws me out."

"And that made you mad," asked the judge.

"No, yore Honor, I didn't get real mad till he grabbed my girl and threw her out, too."

◆ ◆ ◆

Announcer: "We have just received a bulletin of a catastrophe, the like of which has never been known to mankind—but first, a word from our sponsor."

◆ ◆ ◆

Two Navy chief petty officers sightseeing in Sweden one Sunday stopped by a church to watch the services. Since they knew no Swedish, they decided to take their cues from the man sitting in front of them and do what he did. At last the pastor made a special announcement and the man arose; the chiefs followed suit. A ripple of laughter swept the congregation, which remained seated. After the service, the minister met the Navy men and explained in English, "I announced a baptism and asked the father to stand."

Egg Day Scheduled At Purdue for April 3

LAFAYETTE, IND. — More than 300 Indiana poultrymen are expected to meet at Purdue University April 3 for the 4th annual Egg Producers Day.

This year the program will include discussion on factors considered important in producing quality eggs. Also the new revised Indiana state egg law regulations will be discussed by those responsible for its administration.

Dr. E. M. Funk, head of the University of Missouri poultry department, will be a guest speaker.

ADDITION COMPLETED

CASTLEWOOD, S.D. — A $50,000 addition to the Castlewood Farmers Elevator Co. has been completed. Its equipment includes two mixers — a one-ton and a two-ton—a roller mill and a 10,000-gallon molasses tank.

KANSAS CITY, MISSOURI

By 1937 the importance of Kansas City as a millfeed market, and the rapid expansion of the Mixed Feed Industry in the Southwest, encouraged us to broaden our service by establishing an office here.

CALL

Bob Hollister

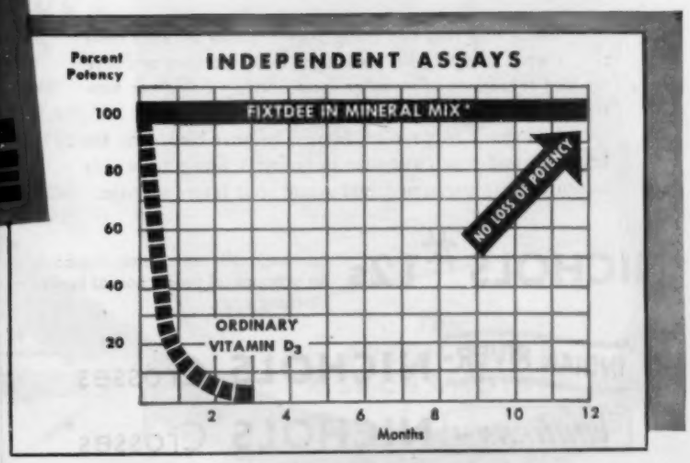
Phone Victor 2-5031 Teletype KC 254

CEREAL BYPRODUCTS CO.

Chicago Buffalo Minneapolis St. Louis Kansas City Omaha

NEW! COMPLETELY STABLE...

even in straight mineral mixes!



*Mineral mixture containing calcium, phosphorus, iodine, cobalt, potassium, sodium, copper, iron and manganese.

VITAMIN D_3 DOMESTICALLY PRODUCED BY DAWE'S

Now you can fortify your feeds with completely mineral stable Vitamin D_3 at half the cost of ordinary D_3—and with greater safety and convenience!

Fixtdee, Dawe's amazing new Vitamin D_3, is guaranteed stable . . . even in a straight mineral mix! In tests, Fixtdee lost no potency even after a *full year* in a mineral mixture.

By making your own D_3 premix with Fixtdee, you get completely mineral stable D-fortification at savings averaging 50%! Simply add one handy 16½ lb. tin of Fixtdee per ton of diluent of choice to make your own 1500 I.C. Units/gram D_3 premix. You'll cut your costs in half!

This new, low cost now makes it possible to further simplify your feed fortification by using Vitamin D_3 in your *animal* feeds as well as poultry feeds. One vitamin D fortification product can now be used to fortify all feeds without a cost penalty. Vitamin D_3 is fully effective for all species.

Think of the accuracy, the convenience and the economy with which you can fortify your feeds with Fixtdee! Get the full story on this important new development in vitamin fortification without delay. Fixtdee is domestically produced under an exclusive patent process by Dawe's, basic producers of feed fortification factors. Write today for complete details.

Dawe's Laboratories, Inc.

Distributors for Belgium: Comptoir Anversois d'Importation, "COMANIMA" 13, Courte rue des Claires, Antwerp, Belgium

World's Oldest and Largest Specialists in Vitamin Products for Feeds

SEND NOW!

DAWE'S LABORATORIES, INC.

4800 S. Richmond St., Dept. FS-36
Chicago 32, Ill.

Please send me scientific proof of Fixtdee stability, together with prices and *free sample.*

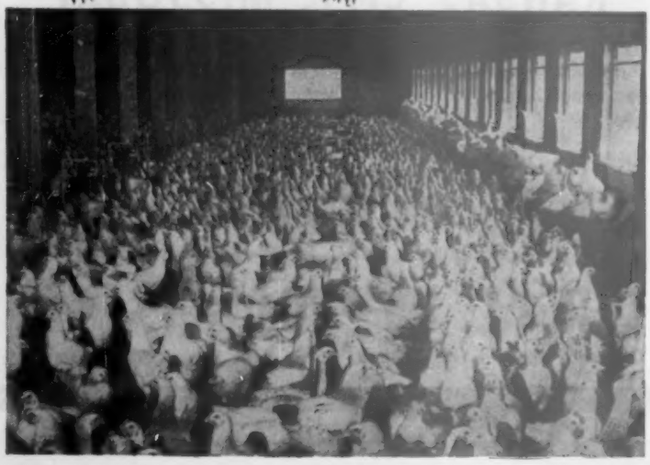
NAME_____

FIRM_____

ADDRESS_____

CITY & ZONE_____ STATE_____

WINTER ... or SUMMER ...



NICHOLS BIRDS
STAY IN CONDITION

You'll find that one thing stands out in Nichols birds . . . they'll take to your feed right from the start and stay on feed regardless of weather conditions — cold, wet winters or torrid summers.

And that's to your advantage, because birds that eat keep you and your customers in business, bring more cash return per bag consumed, and assure your future tonnage.

NICHOLS #12s first nationally distributed crossbreds for economical production of broiler hatching eggs.

INDIAN RIVER-NICHOLS Crosses*

Vantress-NICHOLS Crosses*

* Three way crosses that have given the industry new standards for health, feed efficiency and quality.

For information on this stock, and hatcheries in your area write

NICHOLS Poultry Farm, Inc.

KINGSTON, NEW HAMPSHIRE

Columbus Feed Club Plans Youth Night

COLUMBUS, OHIO—L. H. Cromley, Elm Shade Farms, and Irvin Reigle, Sprosty Bag Co., chairmen of the April program committee for the Columbus Feed Club, have completed arrangements for the club's annual youth night to be held April 6 at the Ft. Hayes Hotel.

Sons and daughters of members will be guests. Miss Mary Ellen Scott a WVTN television performer, will present her daily program, "Play Yard," as the evening's entertainment.

At the March 2 meeting, 50 members and guests heard the presentation of Sam Golden, Amburgo Co., on his trips to Europe and Israel, illustrated with colored pictures.

Plans have been announced for the club's annual spring party and ladies' night May 4. Henry Pruyn, National Distillers Products Corp., is program committee chairman.

Maxwell Latham, Latham Grain Co., now presides over the Columbus Feed Club, succeeding Lloyd Stiles who recently moved to Bath, N.Y., where he represents General Bag Corp.

The club meets at 7:30 p.m. the first Friday of each month through May at the Ft. Hayes Hotel.

Dr. Morrison to Speak

MINNEAPOLIS — Dr. Spencer H. Morrison, director of technical sales for the feed division of Pillsbury Mills, Inc., will be the keynote speaker at the "world's largest 4-H rally" in Laurel, Miss., March 30. "Trends in Modern Feeding" is the title of Dr. Morrison's talk. He will tell the 3,000-member 4-H club about recent nutritional advances and discuss the relations of formula feeds to profitable meat, milk and egg production.

Jacobson QUALITY Hammermills

Offer Lower Grinding Costs Through:

1. Economical Use of Power
2. Increased Capacity
3. Savings in Time and Labor
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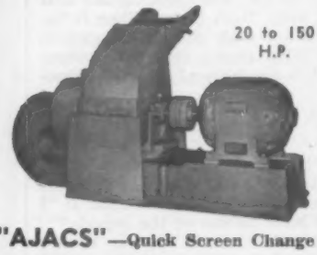
55 to 140 H.P.

"MASTER" Instant Screen Change from Service Floor



20 to 150 H.P.

"AJACS"—Quick Screen Change

30 to 200 H.P.

"UNIVERSAL"

Write Us or Contact Your Jacobson Representative for Additional Details

JACOBSON MACHINE WORKS

46 Years of Continuous Service to the Feed Industry

1090 TENTH AVE. S.E. DEPT. M MINNEAPOLIS 14, MINN.

PAY WAY

Extra Rich FEEDS

DEALER'S CHOICE

Pay Way is becoming the choice of more dealers every year. Why? Because dealers have found that

Pay Way Is Profitable!

Write for proof and information.

PAY WAY FEED MILLS, Inc.

Oscar Straube, Pres.

KANSAS CITY, MO.

Walter Thulin

3 Men Added to New ADM Department

MINNEAPOLIS—The addition of three new men to the staff of the recently formed development department of the Archer-Daniels-Midland Co. has been announced by Dr. George Nelson, department director.

Walter Thulin has been assigned to agricultural products; Donald A. Beadell has been appointed manager of industrial chemicals department, and Dr. Verne C. Bidlack, Jr., will work with resins and plasticizers.

Mr. Thulin, a native of Minneapolis, held the position of supervisor of new product development for a local milling firm before joining ADM. He has bachelor of chemistry and bachelor of business administration degrees from the University of Minnesota. In 1954 he received his master of business administration from the Harvard Graduate School of Business.

Mr. Beadell spent nine years working with industrial chemicals at General Aniline & Film Corp., New York.

Dr. Bidlack previously worked as a development engineer in the chemical division of the Celanese Corp. of America. Prior to that, he was chief organic chemist for Henry K. Wampole & Co. and research chemist in the fabrics and finishes department of Dupont.

Bankrupt Speculator's Activities Face Scrutiny

MEMPHIS—An inquiry into activities of L. V. Butler since he was adjudged bankrupt almost a year ago will be launched in Memphis March 12 by creditors of the former commodities speculator.

Subpoenas ordering nine West Tennesseeans to appear in the courtroom of Carl R. Graves, referee in bankruptcy, have been issued at the request of the creditors' attorneys.

Among those named in the subpoenas were Mrs. Blanche R. Reeve, mother of Mr. Butler; Mrs. Sydney Butler, wife of the bankrupt speculator, and Harold Fowler and Fred Fowler of Sommerville, Tenn.

The subpoenas asked Mrs. Reeve and Mrs. Butler to bring with them their bank statements, deposit slips and cancelled checks dating back to Jan. 1, 1955. The Fowlers were requested to bring records pertaining to any business transactions between them and Mr. Butler, his wife or mother.

R. V. Wiley, assistant secretary of the Memphis Country Club, was ordered by subpoena to produce any records pertaining to Mr. Butler's former or current membership in the Memphis Country Club. Joe Tobias of United Refrigerator Co. and W. Stuart McCloy, attorney, were asked to do the same in behalf of Memphis Hunt & Polo Clubs.

Other witnesses scheduled to appear under subpoena are John C. Whitsitt, assistant vice president of First National Bank, and W. E. Marchman of Memphis, former employee of Mr. Butler.

Soybean Associations Plan Annual Meetings

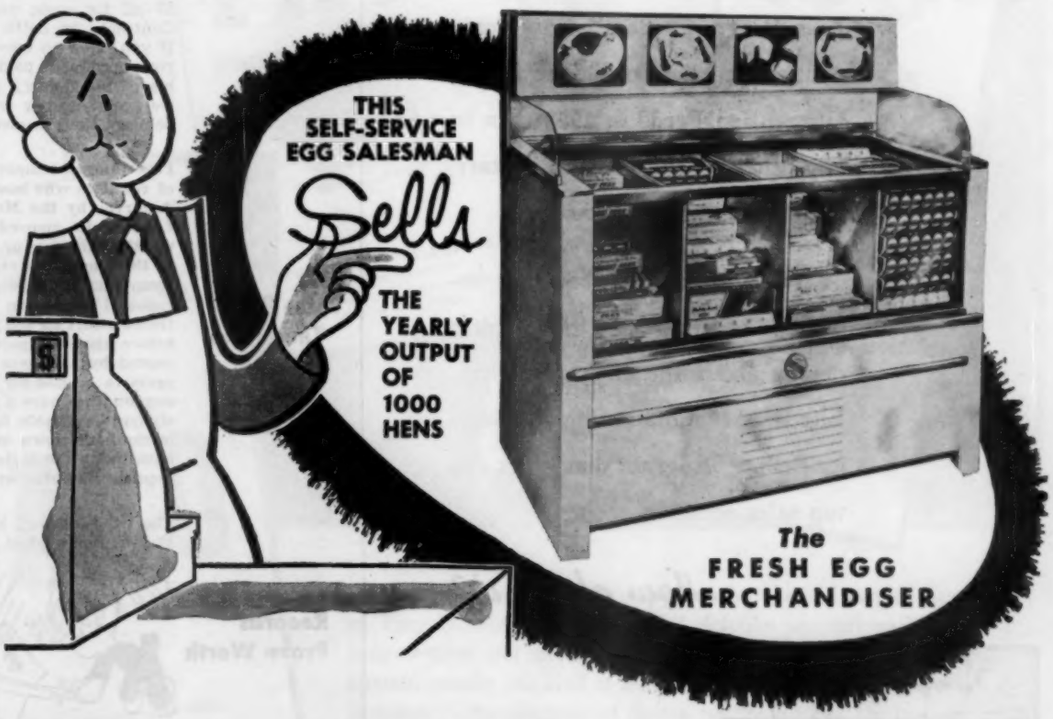
HUDSON, IOWA — The combined annual meetings of the American Soybean Assn. and the National Soybean Processors Assn. will be held on the University of Illinois campus at Urbana Aug. 13-15, it has been announced by George M. Strayer, executive vice president of the American Soybean Assn.

The university and the U.S. Regional Soybean Laboratory, also at Urbana, will be joint hosts. Included will be observance of the 25th anniversary of the founding of the U.S. Regional Soybean Laboratory.

The annual business meeting of the processor association will take place on Aug. 13, to be followed by the 36th annual convention of the American Soybean Assn. on the following two days.

BREWERY TO BE FEED STORE

NELSONVILLE, OHIO — An old brewery building will be converted into a feed supply store and chick hatchery. Harold Koker, agent for Provico Feeds, said his company will take over part of the building for a feed supply store and that the Fleming Hatchery of Steubenville would move into another portion to hatch 15,000 chicks a week.



Now . . . Feed Mills Can Increase Their Tonnage

by helping EGG PRODUCERS find a PREMIUM MARKET for their eggs

TESTS PROVE that egg sales in Super Markets were boosted from 30% to 50% after the FRESH EGG MERCHANDISER was installed. It's proof that people will buy more eggs if they are displayed properly. Be sure to read Russell Mullins' "Feed Flash Report No. 89" which gives the facts pertaining to the tests.

IMPORTANT FEATURES

Case holds 192 dozen eggs at 45° to 55° F. The ideal temperature for keeping eggs fresh.

Egg quality is maintained because of uniform cooling, top to bottom and back to front. Eggs cooled quickly and completely by refrigerated plates separating the rows of eggs.

Adequate space for sales information and 4 lighted full color photos of tasty egg recipes.

Floor space 56 inches by 30 inches deep. All automatic control. Unit self contained and moveable. Shipping weight 500 lbs.

5 year warranty on unit contained.

A simple, easy and inexpensive method has been found to greatly increase consumer buying of fresh eggs . . . especially QUALITY eggs at premium prices. This proved method is to display eggs in food stores by themselves . . . instead of showing them in general display case with other foods. THIS ONLY CHANGE increases retail egg sales from 30% to over 50%. This fact has been PROVED beyond any question by the extensive tests during the past two years under the direction of the Marketing Departments of Cornell, Missouri and Nebraska Universities. In not one test, so far reported, has the increase in egg sales resulting from displaying eggs been less than 30%. The average increase has been 44%.

THE FRESH EGG MERCHANDISER will build BIG Tonnage for feed mills. Why? Because the mill that puts it to work in Super Markets . . . helps egg producers who use his feed get premium prices for their eggs.

HERE IS THE PROGRAM: Your salesman or dealer selects good prospects from among the egg producers in its territory. They explain to the producer that they can arrange for a premium market outlet for his eggs in a nearby city . . . providing the egg producer buys his feed from the dealer.

When the egg producer agrees, the mill salesman or dealer contacts the Super Markets and arranges for installation of the FRESH EGG MERCHANDISER at no cost to the Super Market. The egg producer delivers and takes care of servicing the display . . . getting top prices for his eggs in cartons supplied by the mill. (Carton cost to egg producers to include cost of leasing display . . . total 3¢ to 4¢ per carton.) ACT NOW to put this program into effect in your territory. You need make no investment . . . just lease at $24.00 per month. For further details write Phil W. Tobias, Sr., **TOBIAS ENTERPRISES, 187 No. LaSalle St., Chicago 1, Illinois**

SALESMEN WANTED

In every state who are now calling on Feed Mills, Hatcheries and Egg Producers. Very liberal commission offered.

WRITE TODAY

Lease It!
FOR ONLY
$24.00
PER MONTH

DOUBLE YOUR TONNAGE and
TRIPLE YOUR PROFITS!

HONEGGER LEGHORNS
A natural profit-maker with plenty of follow-up poultry feed sales. An exclusive with HONEGGER DEALERS.

BIG "H" FEEDS
Are tested and proved at Honeggers' 600 Acre Practical Test Farm. The superior results of Big "H" Feeds mean repeat orders and repeat profits.

FARM BUILDINGS
Honeggers' complete line of competitively priced, pre-built farm buildings are an extra "exclusive" profit plus for Honegger Dealers.

EQUIPMENT
Honegger Dealers can have equipment shipped prepaid with their cars of feed. Honeggers' full line of modern labor-saving equipment makes an excellent "door opener" for extra feed sales.

For Full Details Write or Phone Collect TODAY!

HONEGGERS'
FAIRBURY, ILLINOIS

"Snow-Flake"
OYSTER SHELL
★
SEE OUR AD ON PAGE 74

Obey that impulse . . .

Many feed manufacturers did just that last year in regards to finding out facts about the Ultra-Life Program. That's why more poultry and livestock were fed on Ultra-Lifed Feeds in 1955 than in any other year—and 1956 is starting off to beat that record.

Why don't you "obey that impulse" and write today for complete details about the exclusive Ultra-Life Feed Manufacturing and Service-Selling Program that gives you top sales advantage?

How about it?

LABORATORIES, INC.
Main Office and Plant
East St. Louis, Illinois

One of the Country's Oldest and Largest Manufacturers of Vitamin and Trace-Mineral Products.

Call
Van Dusen Harrington Co.
for Barley, Oats, Corn
BUSINESS FOUNDED 1852
MINNEAPOLIS DULUTH

Distributed in Minnesota, North and South Dakota and Western Wisconsin by:
Blomfield-Swanson
6009 Wayzata Blvd., Minneapolis 16, Minn.
Phone: ORchard 5-8805

RINGING THE cash register

MERCHANDISING HINTS FOR THE FEED RETAILER

Takes Money Off Books

"Save money the cash and carry way" is the slogan of the MacLennan Feed Service, Sterling, Ill., owned by James MacLennan. Mr. MacLennan has some valid reasons for believing in the slogan since the cash-and-carry policy was adopted a year ago. "We took $15,000 off of our books this way," he comments. This was accomplished by carefully acquainting his customers with the following feed sales policy: "1 to 900 lb.—10¢ cwt. off for cash; 1,000 to 1,900 lb.—15¢ cwt. off for cash; one ton or over—$5 off for cash; minimum delivery 500 lb.—$1 charge. Contracts on cattle and hog feed are considered cash. If you have an open account, there is no discount until your account is paid in full." Mr. MacLennan states that his cash-and-carry policy has really paid off. "In fact, we even sold our trucks because it was cheaper to hire delivery than to own them," he states.

Use Part Time Help

Part time or temporary employees can solve the problem of retailers who have seasonal peaks in their work load. A survey by the Mutual Employers Association, Inc., in Los Angeles showed that less than 5% of firms checked use the part time or temporary worker. Yet over one third of the employers expressed a desire to use part time or temporary employees. Such an employee offers the advantages of coming in when he is called, spending concentrated effort on the job he is assigned and often departing before his lunch period. His work time need not be interrupted by employee meetings, work breaks, etc. He expects to be laid off when the peak season is over. Most communities have a goodly number of retired persons and students available for part time work. An advertisement in the home town or high school newspaper or placing a notice with the state employment office will usually bring inquiries for little or no cost to the employer.

Records Prove Worth

The value of well kept records are proving their worth at this time when dealers are preparing their income tax statements. Good records help facilitate income tax savings, too, as well as making the chore of preparing statements a lot easier. Dealers who have been negligent in keeping proper records will find it not too late to get started on an improved system now. A year from now they will be thankful they did.

Ads Which Farmers Like

A number of feed dealers have found it beneficial to their businesses to run pictures and brief write-ups of their sales and service employees in their local newspaper advertisements. This type of advertising is a personal, intimate way of promoting a store's feed and services. Most farmers are interested in the pictures and little tid-bits of information contained in such advertising. Such advertising often makes a good conversation piece. Information about hobbies, interests, children and achievements make interesting reading. Many farmers will mention seeing these ads to feed store personnel.

Promotion 4-H'ers Like

Members of 4-H poultry projects are eligible for $2.50 prizes and the privilege of having their projects displayed or publicized by one feed dealer. The dealer, who does a big volume of his business with poultrymen, wants to familiarize youngsters interested in poultry with his store and feeds. He finds the 4-H promotion ideal. The promotion continues for several months out of the year and has been a successful annual event, the dealer states.

Table Mat Advertising

People who attend church dinners at Luther, Iowa, are given something a little extra besides food. The Farmers Cooperative Elevator Co. of Luther provides paper table mats printed with a listing of services and merchandise it has available. The mats are provided free to the churches and their use has become popular.

FISH SOLUBLES
LASSEN PROCESS
CANADIAN & FORTIFIED
R. S. WILSON CO.
1206 MAPLE AVE.-LOS ANGELES 15, CALIF.

Business-Builders
for Feed Manufacturers

"Do-It-Yourself" Information
for Farmers

ALSO AVAILABLE IN 50-LB. BAGS

Here is the ideal, fast-selling package for direct sales to farmers and cattlemen.

These authoritative leaflets on the advantages and correct usage of Paco Molasses Distillers Dried Solubles are responsible for improvement and increased business in all formula feeds. They contain exactly the kind of information wanted by Feed Manufacturers . . . no exaggerated claims, no "bull." Just the facts on what PACO is, what it will do, what it has done, how to use it for bigger profits.

The complete line of Paco folders is now available to all Feed Manufacturers and Dealers, for their own information, along with other literature to distribute to their customers. If you are not acquainted with PACO and its many advantages as a fortifier and "freshener" for all types of feeds, we will be pleased to send by return mail the data you check on coupon below.

PACO MOLASSES DISTILLERS DRIED SOLUBLES

A PRODUCT OF
PUBLICKER INDUSTRIES INC.
ANIMAL FEED SALES DEPARTMENT
1429 WALNUT STREET, PHILADELPHIA 2, PA.
PHONE: LOCUST 4-1400

PUBLICKER INDUSTRIES INC.
Animal Feed Sales Department, 1429 Walnut St., Philadelphia 2, Pa.

Without obligation send the following:

Check Here
- ☐ POULTRY FEEDS with PACO
- ☐ SWINE FEEDS with PACO
- ☐ DAIRY and BEEF CATTLE FEEDS with PACO

Folders to distribute to our customers:

Indicate no. desired
- CUSTOM MIX DAIRY FEEDS with PACO
- FARM USES of PACO

CLIP THIS COUPON TO YOUR LETTERHEAD

☆ Classified Ads ☆

Classified advertisements accepted until Wednesday each week for the issue of the following Saturday.
Rates: 15¢ per word; minimum charge $2.25. Situations wanted, 10¢ a word; $1.50 minimum. Count six words of signature, whether for direct reply or keyed care this office. If advertisement is keyed, care of this office, 20¢ per insertion additional charged for forwarding replies.

Classified advertising rate not available for commercial advertising. Advertisements of new machinery, products and services accepted for insertion at minimum rate of $9 per column inch.
All Want Ads cash with order.

HELP WANTED

SALES MANAGERS DO YOU NEED cockerels for Free Chick Days? Shipping four times weekly. We can supply you. Welp's Hatchery, Bancroft, Iowa.

WANTED—FULLY QUALIFIED MAN TO handle dog food department. Give full qualifications. Address Ad No. 1537, Feedstuffs, Box 67, Minneapolis 1, Minn.

SALESMAN, INCREASE YOUR INCOME, sell complete line of veterinary products, to feed dealers and hatcheries, excellent commission. Address Ad No. 1472, Feedstuffs, Box 67, Minneapolis 1, Minn.

EXPERIENCED DOG FOOD SALESMAN with a following among feed stores, to sell nationally distributed dry dog food. Complete line. Many territories open. Commission and expense allowance. Ad No. 1349, Feedstuffs, Box 67, Minneapolis 1, Minn.

SALESMAN (2)—PREFER MAN TRAINED by Purina or other aggressive merchandising feed manufacturer to cover established Michigan or Wisconsin territory. This is an excellent position. Address 1490, Feedstuffs, Box 67, Minneapolis 1, Minn.

WANTED — SALESMAN WITH EXPERIence and good following with feed trade, to represent nationally known firm manufacturing important ingredient. Must give references. Address Ad No. 1575, Feedstuffs, Box 67, Minneapolis 1, Minn.

AVAILABLE TO AN AGGRESSIVE, INtelligent individual experienced in the sale of poultry equipment and veterinary drugs. An established territory in New Jersey and adjacent New York State and Pennsylvania will be assigned through consultation. Expenses and transportation provided. Guaranteed salary with commissions. State qualifications. Apply Garden State Supply Co., Belvidere, N. J.

EXPERIENCED FEED SALESMEN — Swift & Co. are expanding their feed sales and are interested in talking to men who can sell a high quality line of feed, concentrates, base formulas, minerals and specialties. We furnish car, all expenses, good salary and commission plan and splendid opportunities for those looking for a permanent business career. Write to General Feed Department, Swift & Co., U. S. Yards, Chicago 9, Ill., and please furnish complete details.

FEED SALESMAN

Needed traveling man calling on jobbers and wholesale feed dealers to handle Shellbuilder Crushed Oyster Shell for poultry on brokerage basis. Territory Ohio, Indiana, Illinois, Nebraska, Wyoming, Montana, North Dakota, Iowa. Provided you are qualified we will send man to help you get started. Send full particulars to:

SHELLBUILDER COMPANY
620 Melrose Building
Houston 2, Texas

MANAGER, FARM SALES DIVISION

Southern California mill, with a quality feed and a good reputation for over 25 years, needs man with poultry and animal nutrition, and successful sales management background to supervise 12 to 14 men calling on commercial poultrymen and stockmen within a 200 mile radius of Los Angeles. Your communication can be in confidence. Address Ad No. 1545, Feedstuffs, 612 Board of Trade, Kansas City 5, Mo.

SALES MANAGER

Medium sized AAA 1 midwest feed manufacturer wants aggressive man to direct and manage sales force selling a complete dealer franchise built around top quality feeds. You are probably now employed supervising salesmen in some capacity, you have hired and trained salesmen, you have a successful tonnage building record. Age 30-45. If qualified, send full particulars and recent photo to Ad No. 1444, Feedstuffs, Box 67, Minneapolis 1, Minn. All replies treated strictly confidential.

HELP WANTED

SALES MANAGER WITH DEGREE IN nutrition to head sales of eastern feed manufacturer. Individual must be top caliber for comparable remuneration. Replies in strictest confidence. Address Ad No. 1543, Feedstuffs, Box 67, Minneapolis 1, Minn.

GRAIN AND FEED MACHINERY SALESman wanted—Are you qualified to sell machinery to the elevator trade? If you are now calling on firms in northern Indiana and northwest Ohio you're the man we want. Very liberal commission offered. Established and protected territory. Address Ad No. 1538, Feedstuffs, Box 67, Minneapolis 1, Minn.

SALESMAN WANTED — MANUFACTURER of well-advertised rodenticide has opening in choice territories for direct factory representation. Item is best-seller in already established areas. Give brief background outline including territory now covered, how long, current lines carried. Write P. Kremer, Murd Co., 122 Cuthbert St., Philadelphia 6, Pa.

FEED SALESMAN

An aggressive southern Minnesota feed manufacturer needs an experienced Feed Salesman for an established territory in Central Minnesota. Salary and commission arrangement offers attractive earnings opportunity. Sound employee relations program. Reply giving full particulars regarding education, training and personal history to Ad No. 1577, Feedstuffs, Box 67, Minneapolis 1, Minn.

FUMIGATION MEN WANTED

Rapidly expanding Fumigation Division needs men experienced in actual fumigation work. Parent company long a leader in grain storage operations. Because of successful techniques and results in own storage facilities, company has been named distributor for Liquid Cyanogas (H. C. N.) for large mid-western area. New division offers ambitious men with fumigation experience opportunity to grow with it. Men must be cooperative, have initiative, be hard workers and willing to travel. Please give full qualifications in first letter. State salary desired. All replies confidential.

Dannen Fumigation Division
DANNEN MILLS, INC.
Box 429 St. Joseph, Mo.
Distributors of Liquid Cyanogas (H.C.N.)

SITUATIONS WANTED

AMBITIOUS, ENERGETIC ENGINEERING graduate now holding responsible position with large national concern desires job as manager or superintendent of feed mill. Will consider working partnership or foreign assignment. Address Ad No. 1589, Feedstuffs, Box 67, Minneapolis 1, Minn.

FEED MILL SUPERINTENDENT, EXTENSIVE experience in all phases of mill operation, desires supervisory position, also as assistant in larger mill. Will locate anywhere. Address Ad No. 1578, Feedstuffs, Box 67, Minneapolis 1, Minn.

FEED SALES EXECUTIVE AVAILABLE

Seeks new challenge and opportunity in feed or allied industry. Experienced in advertising, promotion, and all phases of sales management. Married, willing to relocate. Resume on request. Write in confidence to Ad No. 1534, Feedstuffs, 141 W. Jackson Blvd., Chicago 4, Illinois.

MACHINERY FOR SALE

FEED MIXER — ONE AND ONE HALF ton vertical without motor, $150. The White Elevator Co., Pulaski, Wis.

CHAMPION MOBILE GRINDER AND MIXer units. Champion Portable Mill Co., 2105 Como Ave. S.E., Minneapolis 14, Minn.

WHIRLAWAY AIRBLAST CAR LOADERS. J. E. Hagan Mill Machinery, Jefferson City, Mo.

WEIGH BUGGIES, MOLASSES BLENDers, Portable Turret Screw Conveyor. Write for bulletins. Mill Equipment Sales, Box 222, Hillsdale, Mich.

WHEN YOU ARE IN THE MARKET FOR new or used mill machinery, electric motors or any other equipment, write J. E. Hagan Mill Machinery, Jefferson City, Mo.

WRITE US, WE HAVE WHAT YOU NEED in supplies for feed and flour mills. If it's new or used, buy it from Hughes, Wayland, Mich.

FEED MIXER, 1-TON CAPACITY, GUARanteed first-class throughout, 5 H.P. motor drive. Ad No. 3774, Feedstuffs, Minneapolis 1, Minn.

HEMCO CAR MOVER, SANDING ATTACHment and extras, $4,800; new, used one year, excellent condition, make offer. C. W. Martin, Doughboy Industries, Inc., New Richmond, Wis.

FOR SALE—NEW 1½-TON HORIZONTAL Davis Mixer; 12x18 Krimper Cracker with magnet and 5,000 gal. molasses storage tank. Address Ad No. 1574, Feedstuffs, Box 67, Minneapolis 1, Minn.

ONE HAY DIXIE HAMMER MILL WITH motor; one Jay Bee with Diesel engine; one Joliet Sheller with drag; Diesel engines up to 100 H.P. C. L. Smith, Leola, Pa.

MACHINERY FOR SALE—NO. 30 BLUE Streak Hammermill with dust collector and 40 H.P. motor direct drive. Price $495. Ideal Feed Co., 507 Laurel Ave., Janesville, Wis.

NEW AND REBUILT UNION SPECIAL Sewing Machines. Styles 14500-F & H and 80600-E, also complete suspended units. Style 80600-H tape closure sewing heads with new five-foot power conveyors. Delivery at once. E. C. Covell, 302 Overbrook Rd., Baltimore 12, Md.

FOR SALE—ENCLOSED MOTORS, RICHardson Scales, truck scales, hammermills, oat crimpers, horizontal and upright feed mixers, sewing machines, elevator legs, screw conveyors, molasses mixers and pellet mills. J. E. Hagan Mill Machinery, Box 574, Jefferson City, Mo.

FOR SALE — FOUR SPROUT-WALDRON Ribbon Mixers, 336 cu. ft. (12,000 lb.) working capacity. Rotary Dryers, 3'x25'; 4'x20'; 4'6"x40'; 5'x30'; 5'6"x50'; 6'x40'. Also Hammermills, Pulverizers, Bucket Elevators, Screw Conveyors, Bulk-Flo Drag Conveyors, etc. Perry Equipment Corp., 1403 N. 6th St., Philadelphia 22, Pa.

HART-CARTER NO. 45 UNIFLO GRAIN Separator, complete with 11G-ID 800 R.P.M. motor; two bulk liquid storage tanks 8'x10'; two style JJ Draver Chemical Feeders, equipped with 1 G motor; two Omega Chemical Feeders, size 44, model 40; two No. 701 Flu-A-Dee liquid metering units; one 12' natural frequency conveyor with motor. The Glidden Co., 1160 W. 18th St., Indianapolis 9, Ind.

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Penn State Reports On Studies with 1 Sq. Ft. Per Layer

UNIVERSITY PARK, PA. — With only 1 sq. ft. of floor space per bird, the 2,700 White Leghorn layers in the experimental solar poultry house at Pennsylvania State University are laying as consistently high as those with the recommended 3½ sq. ft. per bird, according to Dr. G. O. Bressler, in charge of the studies.

Dr. Bressler says that the birds hatched last May, then reared on range last summer and housed in late October averaged 77% production in January. Then, in February, egg production rose to 80%, with a peak of 83%, as the birds took turns in the battery of individual wall nests in the house.

Actually, this performance is better than three years ago when the solar house was used in studies that gave the layers 1.9 sq. ft. of floor space per bird, Dr. Bressler says.

This year's arrangement of the interior of the solar house has a few slight modifications over last year's studies when the 1-sq.-ft.-per-bird was tried for the first time. Two narrower droppings pits extend the length of the building instead of one wide pit, but mechanical cleaning of the pits continues, same as last year.

Over each of the pits extend four tiers of feeders with four tiers of roosts, and one tier with water. Sawdust is used for the litter which has been maintained in a dry condition regardless of rainy cold weather and high humidity outside. A pressurized ventilating system also aids in maintaining low humidity in the crowded house. Temperature is maintained at 55° F.

Mortality and culling combined have been maintained at a rate of 1½% per month, Dr. Bressler says, a comfortably low ratio considering the number of birds in this year's studies. All operations except egg gathering are automatically operated, the same as last year's experiments, he explained.

Twin City Seminar Set for March 20

ST. PAUL — A nutritional review of folic acid and vitamin K will be presented at the Twin City Nutrition Seminar, to be held at 8 p.m. Tuesday, March 20, at Peters Hall on the St. Paul campus of the University of Minnesota.

Dr. T. D. Jukes of the American Cyanamid Co., Pearl River, N.Y., will discuss folic acid, and Dr. D. V. Frost of Abbott Laboratories, North Chicago, Ill., will talk on vitamin K.

Dr. I. E. Liener of the university staff is in charge of the program.

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Frank F. Black

IN NEW POST—Frank F. Black, for 20 years associated with the organic chemical and pharmaceutical trade, has joined the sales staff of Cowles Chemical Co., Cleveland, Ohio. He has been named manager of Cowles' newly established organic chemical department. Mr. Black's appointment was announced recently by C. C. Bassett, Cowles' vice president and director of sales. In the future Mr. Black will direct the sale of organic chemicals with pharmaceutical and nutritional applications which are scheduled for early production in Cowles' new organic chemical plant in Skaneateles Falls, N.Y. Mr. Black was most recently associated with a prominent manufacturer of chemicals and pharmaceuticals where he had served as chemical division sales manager and as manager of bulk medicinal chemical sales. Mr. Black is a registered pharmacist and a graduate of Philadelphia College of Pharmacy and Science.

Clinton Foods Starts Research Laboratory

CLINTON, IOWA—Clinton Foods, Inc., has started construction on a two-story research laboratory at its Clinton plant. The 100 by 120-ft. brick, glass and steel structure will cost an estimated $750,000.

The announcement was made by Roscoe C. Wagner, president, who said the new building would allow the firm to consolidate many of its technical services and research laboratories into one center and also allow for considerable expansion of these facilities.

The new laboratory will make possible enlarged research facilities in the field of animal feeds, starch, corn sugars and corn syrups, vegetable oils and lactic acids. There will be a special bacteriological laboratory for fermentation research in lactic acid, antibiotics and feed fermentation supplements.

TOO MUCH FAT

Too much fat on gilts and sows at breeding time will decrease litter size, according to specialists at Alabama Polytechnic Institute.

Texas Experiment Station Reports on Cattle Feeding Tests

COLLEGE STATION, TEXAS — Experimental work with urea-molasses and other materials as supplements for wintering beef cattle was reported recently by Prof. J. K. Riggs of Texas A&M College.

One experiment invloved urea-molasses vs. cottonseed meal and molasses as supplements to sorghum silage for wintering two-year-old heifers.

Prof. Riggs reported that heifers fed 2 lb. of cottonseed meal and 3 lb. of molasses in addition to a full feed of sorghum silage gained 108 lb. per head during a 100-day wintering period. Heifers fed 5.5 lb. of urea-molasses mixture (90% molasses, 10% urea and containing 30% crude protein equivalent) as a supplement gained 62 lb. per head. The heifers fed urea-molasses consumed about 4 lb. less silage per day than those fed cottonseed meal. Both groups had free access to steamed bone meal and salt.

With cottonseed meal at $66 ton, molasses at $20, urea-molasses mixture at $42.75 and silage at $10, the cost of feeding was reported to be about the same for both groups.

In another experiment, two-year-old Santa Gertrudis steers fed 2.57 lb. of sorghum gluten meal as a supplement to pasture and sorghum silage gained 1.61 lb. per head daily in an 84-day wintering period. Similar steers fed 3.35 lb. of a urea-molasses mixture in place of gluten meal gained 1.39 lb. Prof. Riggs said feed efficiency favored the group fed sorghum gluten meal since the cost of gain was lowered by $1.68 per 100 lb.

The cattle consumed about 4 lb. of the urea-molasses mixture during the first part of the wintering period but later reduced their intake as pasture forage became more abundant. The mixture was palatable and had no undesirable side effects.

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Fish Meal Output Up 49% in December

WASHINGTON — December production of fish meal and scrap by firms which normally account for about 90% of the total output amounted to 13,102 tons, compared with 8,781 tons for December a year ago, according to the U.S. Department of the Interior. This represents an increase of 49%.

Production of condensed fish solubles during December, 1955, amounted to 6.2 million pounds, compared with 8.6 million pounds reported for the same month in 1954, a drop of 28%.

Homogenized condensed fish production during December totaled 2.3 million pounds, compared with 2.4 million pounds produced during December 1954. This was a decrease of 4%.

Imports of fish meal during November, 1955, amounted to 9,921 tons compared with 5,196 tons which entered the U.S. during the same month in 1954, according to the report. During the first 11 months of 1955, 87,828 tons of meal were imported, compared with 134,084 tons during the same period of 1954—a drop of 34%.

3 Named to Central Soya Advisory Board

FT. WAYNE, IND. — Three new members have been named to the advisory board of directors of the Central Soya Co. E. O. Huge, stores manager; D. M. Kernen, east central district sales manager, and Wendell Mann, Marion, Ohio, plant manager, began 12-month terms on the 15-man rotating membership board on March 1. In accordance with the by-laws of the advisory board, three members rotate off the board every 12 months.

Following the selection of the three new members, the board named John Andreas as chairman for the term, and E. G. Rose as secretary. R. N. Allen, E. P. Kovats and B. A. Townsend were named to the steering committee.

ADDS PORTABLE MIXER

RICHLAND CENTER, WIS.—The Richland County Cooperative Farm Supply Co. has added a new portable feed milling unit. Robert Staum, manager, reports enthusiastic customer acceptance of the new service.

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FEED RATIOS

(Continued from page 1)

the mid-January ratio and 1 point above the figure for a year ago.

The improvement in the hog-corn ratio was from 9.4 in mid-January to 10.2 in mid-February, largely because of better hog prices, USDA reports. This ratio started an upward climb a month earlier. The relationship was still not so good as it was in mid-February of 1955 when 100 lb. of live weight hog would buy 11.7 lb. of corn.

A seasonal decline in the prices for milk and butterfat sent the ratios on these products down slightly during the month. The milk-feed relationship was 1.37 in February compared with 1.42 in January and 1.42 a year ago.

The USDA report shows that the butterfat-feed ratio changed from 22.2 in January to 22 in mid-February, still above the 19.6 of a year ago.

Average Feed Prices

Average prices for feed paid by farmers in mid-February, according to USDA figures, were as follows (in cwt. with figures for the previous month and a year ago, in that order, in parentheses): Laying mash $4.36 ($4.36 and $4.76); broiler growing mash $4.81 ($4.79 and $5.18); dairy feed under 29% protein $3.65 ($3.65 and $3.95).

The feed price index stayed at 200 during the month. The meat animal index of 215 showed a 4% increase over the mid-January level but was 19% below February a year earlier and the lowest for a February since 1946. Considerably higher prices for hogs and lambs, together with small price increases for beef cattle and calves and sheep were responsible for the increase, USDA reports.

The poultry and egg index in mid-February was off 8% from a month earlier. And the dairy products price index dropped 2% in the same period.

The over-all index of prices received by farmers was the same in mid-February as a month earlier — at 226% of its 1910-1914 average. This was 7% below a year ago, according to USDA.

The parity index of prices paid by farmers was down 1 point in mid-February, primarily because of lower seed and food prices. This was 1% below a year earlier. The parity ratio (ratio of the index of prices received to the index of prices paid, interest, taxes and wage rates) rose 1 point to 81. This was the first increase recorded since last April, USDA reports. The February ratio was 6% lower than a year earlier.

Shippers to Meet

MINNEAPOLIS—Dr. O. B. Jesness, head of the department of agricultural economics at the University of Minnesota, will discuss government farm programs at a meeting of the Minneapolis Grain Shippers Assn. March 20 at the Covered Wagon. Dinner will be preceded by a cocktail hour starting at 5:30 p.m.

Poultry Meeting Set At Georgetown, Del.

GEORGETOWN, DEL.—Topics of interest to poultrymen will be presented at a meeting to be held in the Dublin Hill Community Hall March 21 at 8 p.m. Problems in brooding, ventilation and raising flock replacements will be discussed.

The program, which has been planned by the Delaware Agricultural Extension Service, includes the following speakers and topics: Dr. Thomas Coulton, Cooperative Mills Research Farm, "Better Brooding Practices"; William Larsen, extension service, "Broiler and Laying Houses"; S. L. McHenry, extension poultry specialist, "Restricted vs. Full Feeding of Flock Replacements"; Ray Lloyd, assistant county agent, "Keep Chickens Cool Next Summer."

Moisture Shortage In Corn Belt Areas Noted by USDA

WASHINGTON—The U.S. Department of Agriculture, in its latest crop report, calls attention to a danger signal in connection with 1956 crop prospects.

It is pointed out that there is a subsoil moisture shortage which important Corn Belt sections in Iowa, Nebraska, Kansas and parts of Illinois and Missouri have inherited from the previous dry summer, fall and winter.

Timely rains during the growing season will be needed even more urgently than usual in parts of the Corn Belt unless heavy early spring rains erase the deficit.

In contrast, soil moisture supplies in most of the eastern half of the nation, in the mountain states, northern plains and far West are ample—in places excessive.

Southern plains wheat needs more moisture.

Meanwhile, USDA noted, severe winter weather in Minnesota, the Dakotas, Montana, Idaho and Washington, as well as other areas, increased the drain on hay and other stored forage and resulted in some local shortages. Hay supplies are still regarded as adequate, although some redistribution is being made. Livestock condition has been well upheld by heavy feeding during these unfavorable periods.

TO BUILD WAREHOUSE

APPLETON, MINN. — It was recently announced that the Farmers Cooperative Elevator will build a 50 by 30 ft. feed warehouse to use in conjunction with its elevator.

CCC BINS

(Continued from page 1)

totaling 300 million bushels through Feb. 15, indicates a major storage problem for CCC this summer and fall, according to USDA. Additional space will be required for handling take-over of the probable near-record quantities of corn put under the 1955 support operation.

Even though CCC has sizable storage capacity and has tried to move its inventory into useful outlets, USDA officials say the storage problem still remains acute. The CCC currently has large holdings of grains and related commodities. A large part of the sizable emergency type storage capacity that CCC has is filled with grains.

In bin-type storage, the CCC has a capacity of approximately 884 million bushels. In addition, more than 85 million bushels of wheat are stored in 373 ships of the U.S. Maritime Administration Reserve Fleet at East and West Coast anchorages.

The purchase of bins by the CCC will not lessen the need for farmers to take the necessary steps to provide adequate storage for their 1956 crops, USDA warns. Any bins purchased by CCC will be used only for the storage of government-owned grains. The bins will be used only in areas where commercial facilities are limited and are needed for storing production from the 1956 harvest.

The USDA anticipates the purchase of standard bins of 3,250 bu. capacity.

USDA officials have indicated that the storage situation will be kept under continuous review. The record total stocks of both food and feed grains now in government, farmer and commercial inventories indicate a continuing tight storage situation for this summer and fall, they say.

USDA has stated that every effort will be made to manage CCC stocks in such a way as not to plug commercial channels during the period of heavy producer marketing of 1956 crops.

FARM BILL PROVISIONS

(Continued from page 1)

by just the parity provision to adjust the support prices for oats, barley, rye and grain sorghums upward for the present crops.

In addition, the Daniels amendment and its plan to relate supports for these other grains to corn on a feed value relationship would require increases for these grains from previously announced support levels.

Thus, the combination of the Daniels amendment and the restoration of the dual parity provision would make it necessary for USDA to revise its supports for the other feed grains whose supports would be geared to that of corn.

For 1957 and thereafter, the Daniels amendment provides that the price support levels would be 95% of the support level for corn in the commercial Corn Belt, adjusted for the feed equivalent value of each grain in relation to corn.

The long and the short of this mean that, as the Senate farm bill now stands, the price support levels for these grains would be markedly increased for the 1956 crops and succeeding ones. This amendment can be construed, according to USDA observers, as little more than an attempt to boost the price support level for grain sorghums.

Limitations

Both the Hickenlooper amendment and its modifying Daniels amendment, however, provide some limitations. The Hickenlooper amendment fixes a farm reserve base for corn of 51 million acres, but there would be no acreage allotment compliance by farmers as a condition for price support purposes. But a corn producer in the commercial Corn Belt, to obtain price support and soil bank payment certificates, would be required to reduce corn plantings by 15% from his proportionate share of the 51 million acre corn farm reserve base.

In the Daniels amendment, a somewhat similar provision is made. Producers of oats, barley, rye and grain sorghums would be required to maintain production within the average planted acreage for those crops in the three years prior to enactment of this law, or would enter into contracts with USDA to withdraw not less than 15% of the tillable acreage on the farm for either of the soil bank programs.

While such qualifications are seen as adding strong persuasion to the producers of these crops to join in the soil bank operations and attain a goal of an overall reduction of 15% of the nation's feed grain acreage, the price support pattern is something of a much different nature.

Starting with 1957, for example, grain sorghums, oats, barley and rye grown outside the commercial Corn Belt would be price supported at 95% of the corn price support of the commercial Corn Belt adjusted for feed value relationships. Since corn outside the commercial Corn Belt is price supported at only 75% of the level of the commercial area, it is conceivable that some of the other feed grains in the non-commercial area might be supported at a higher price than corn.

Hodge-Podge Possible

The farm bill as it is now developing is legislation composed on the Senate floor rather than in the more deliberate atmosphere of a committee chamber where legal staff attendants may study the consequences. This may result in a veritable hodge-podge which could easily defeat any attempt to get a farm bill this year. It is not inconceivable that the Senate, in disgust, may recommit the present bill to committee, possibly ending all hope of a farm bill this session.

As things now stand, every regional politician is eager to get through some type of amendment which would carry local appeal, thereby favoring his position with his local farmers.

Another factor is the still lengthy number of additional amendments yet to be considered which, if accomplishing nothing else, can drag out the Senate debate possibly well into next week.

The cloudy nature of the farm bill as it stands this week may be found in a comparison of the Hickenlooper-Daniels amendment and one which is still subject to Senate consideration, the Holland amendment.

Sen. Spessard Holland of Florida has offered an amendment which imposes a sweeping cross-compliance for the purposes of price support on all agricultural crops except tung nuts. Producers would have to agree to allow certain acreage to lie idle or devote it to soil-conserving crops—tillable land which ordinarily has been devoted to soil-depleting crops.

Since soybeans are described as a soil-conserving crop, it is conceded that if a farmer took acreage out of corn, wheat, cotton or other crops to gain eligibility for price support or soil bank participation, he could, within the framework of the Holland amendment, plant the land so removed from production in soybeans without penalty.

Texas A&M Sets Cage Layer Clinic

COLLEGE STATION, TEXAS—A cage layer clinic for Texas poultrymen will take place at Texas A&M College here March 28.

Rapid increase in the cage laying operations in Texas has created a demand for the session, college officials said in announcing the one-day program of study. Texas county agents estimate that there are 1,243,000 hens in cages in the state now, compared with 272,000 two years ago.

Among the speakers on the March 28 program will be Lynn B. Sanborn, farm advisor of Los Angeles County, California, who has much experience with concentrated cage egg production and will explain current practices in that area.

Dr. J. R. Couch of the Texas A&M faculty will discuss feeding of cage layers. Other faculty speakers will include Dr. J. P. Delaplane on vaccination, Dr. B. L. Reid on pullet feeding, Robert Mayfield on fly control, Ben Wormeli on housing, Dr. R. D. Turk on mite and louse control, Dr. W. F. Krueger on lights, E. D. Parnell on marketing of eggs.

Current trends in Texas egg production will be outlined by F. Z. Beanblossom. Dr. J. H. Quisenberry will discuss the basic requirements of hens for cage production and will be chairman of one of the sessions. George P. McCarthy, Universal Mills, will be chairman of the other.

Production of Millfeed Increases

Production of millfeed in tons for week ending March 9, and prior two weeks, together with season total of (1) principal mills in Nebraska, Kansas and Oklahoma and the cities of Kansas City and St. Joseph; (2) principal mills of Minnesota, Iowa, North and South Dakota and Montana, including Minneapolis, St. Paul and Duluth-Superior; (3) mills of Buffalo, N.Y. Production computed on the basis of 72% flour extraction.

	Southwest*		Northwest*		Buffalo†		Combined**	
	Weekly production	Crop year to date	Weekly production	Crop year to date	Weekly production	Crop year to date	Weekly production	Crop yr. to date
March 5-9	24,902	922,185	13,005	491,117	10,564	321,239	48,471	1,744,541
Prev. week	‡25,351		‡13,243		9,482		‡48,056	
Two wks. ago	24,004		13,236		10,607		48,547	
1955	24,696	807,890	11,877	536,273	10,380	386,000	46,956	1,730,163
1954	23,633	869,732	12,793	520,371	9,361	389,250	45,787	1,759,343
1953	22,467	888,005	15,430	556,280	9,597	468,123	47,494	1,912,808
1952	23,951	939,475	14,067	426,238	10,231	361,788	48,249	1,717,499

*Principal mills. **74% of total capacity. †All mills. ‡Revised.

THE FEED MARKETS

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Demand — Supply — Trends — Prices

Quotations on feed ingredients shown in these and adjoining columns are wholesale prices, per ton, bagged, for prompt delivery, unless otherwise noted. They are the latest quotations available from Feedstuffs correspondents and are not necessarily those in effect on date of publication. The prices represent fair average trading values and do not necessarily represent extreme low or high levels at which individual sales might have occurred. A descriptive summary of supply and demand factors prevalent in the feed market appears on page 2.

ALFALFA MEAL

Chicago: Demand slow; supply adequate; 17% dehydrated, with 100,000 units vitamin A guaranteed $50.50@51; 17% with no A guaranteed $40@40.50; 13% fine ground suncured $39.50@40.

Los Angeles: Demand fair; trend steady; supply ample; 15% suncured $43; 17% dehydrated $44@45.

Kansas City: Market again a trifle easier with demand fair and offerings adequate; some grades holding steady; 125,000 A, 17% dehydrated alfalfa meal $52, sacked, Kansas City; 100,000 A 17% dehydrated alfalfa meal $46@48, sacked, Kansas City; no A guarantee 17% $36.50@40, sacked, Kansas City; 17% 100,000 A, bulk, pellets $42, Kansas City; No. 1 fine ground suncured $37@39, sacked; No. 1 ¼-in. $35, No. 2 ¼-in. $33.50@34, sacked, Kansas City.

Boston: Demand light; supply adequate; dehydrated, 17% $60@62; suncured 13%, Colorado $53.50, Missouri $42.95.

St. Louis: Demand slow; trend lower; supply ample; dehydrated, 17%, 100,000 A $52.75 ton; suncured No. 1 fine ground 13% $43.50 ton, f.o.b. St. Louis.

Omaha: Demand fair; supply ample; 17% dehydrated, non A, papers or burlaps $36, greased or granules $38; 17% dehydrated, 100,000 A, papers or burlaps $48, greased or granules $50; No. 1 fine ground suncured, papers or burlaps $37; No. 1 ¼-in., burlaps $34; No. 2 ¼-in., burlaps $32.

Ft. Worth: Demand improved; supply adequate; dehydrated 17% protein, no A guarantee $44, basis f.o.b. Plainview area; northern origin 100,000 A $56@57, delivered Ft. Worth, depending on origin of tonnage, prompt shipment.

Denver: Demand fair; trend steady; supply adequate; 17% dehydrated $48.

New Orleans: Demand slow; supply ample; trend steady; 17% dehydrated, vitamin A guaranteed $55@58; non-guaranteed $49@52, 15% $46@49.

Memphis: Demand poor; trend slightly lower; supply adequate; dehydrated, 17% protein, guaranteed 100,000 units vitamin A $52.30.

Minneapolis: Market easier; demand fair, quotations: 17% dehydrated, 100,000 units of vitamin A guaranteed $50@52, sacked; granules or oil-treated $50@51, bulk; 18% dehydrated, 125,000 units of vitamin A guaranteed $54.70, sacked; granules or oil-treated $53.70, bulk; non-guaranteed $40@41, sacked.

Portland: Demand good; supply limited; trend unchanged; 15% suncured $48.50, delivered Portland; 15% suncured $40, f.o.b. California; dehydrated $50, f.o.b. California.

Cincinnati: Demand fair; trend steady; supply adequate; 17% dehydrated, 100,000 vitamin A $57@59.85; 17% dehydrated, no A $45.50; 13% fine suncured $36@45.50.

Seattle: Demand slow; trend easy; supply good; 15% protein suncured $48.50 ton, delivered, carlots; 136,000 A unit dehydrated $65 ton, delivered, carlots.

Philadelphia: Demand dull; supply fair; 17% dehydrated $61.

Buffalo: Demand and supply fair; trend steady; $68, sacked, Boston.

ALFALFA PELLETS

New Orleans: Demand slow; supply ample; trend steady; 17% dehydrated $58@60, vitamin A guaranteed.

Omaha: Demand fair; supply ample; 17% dehydrated, 100,000 A $46 bulk, $48 sacked.

Denver: Demand fair; trend steady; supply adequate; 17% dehydrated $51.

BARLEY FEED

Los Angeles: Demand improved; trend steady; supply ample; standard rolled $2.94; standard ground $2.89.

Chicago: Demand fair to good; supply adequate; $37.

Baltimore: Demand fair; supply adequate; $46.

Philadelphia: Demand dull; supply fair; pulverized $49.

Boston: Demand slow; supply good; $46.

Ogden: Supply average; rolled $45@50; whole $38@43.

Seattle: Demand slow; trend steady; supply good; whole $57 ton, ground $57 ton, rolled $58 ton, all ex-warehouse, l.c.l., sacked.

Portland: Demand good; trend firm; supply ample; rolled $59, ground $57.

New Orleans: Demand slow; supply adequate; trend steady; pulverized feed barley $46@48.50.

BENTONITE (SODIUM)

Chicago: Demand very good; supply adequate; f.o.b. Wyoming and South Dakota shipping points: granular, 30 mesh $15.50; fine granular, 80-100 mesh $12.75; powder, 200 mesh $12.50; f.o.b. Bell Fourche, S.D., minimum 30-ton carlot: 30 granular $12.50 net; 200 mesh fine $12.25 net.

BLOOD FLOUR

Louisville: Demand slow; trend easy; supply good; $70@80 ton.

New Orleans: Demand slow; trend steady; supply adequate; $87.50@90, local origin.

BLOOD MEAL

Louisville: Demand dull; trend weak; supply heavy; $70@80 ton.

Seattle: Demand slow; trend easy; supply good; $80 ton, ex-warehouse, truck lots.

Cincinnati: Demand fair; trend steady; supply adequate; $120.

Portland: Demand slow; supply ample; trend unchanged; $100.

New Orleans: Demand good; supply ample; trend steady; $87.50@90, local origin.

Los Angeles: Demand fair; trend steady; supply ample; $4.25 a unit of protein.

Chicago: Demand slow; supply adequate; $95@117.50 ton, guaranteed 80% protein.

Ogden: Supply average; $95 ton in 100-lb. bags, f.o.b. Ogden.

BONE MEAL

Louisville: Demand slow; trend steady; supply normal; $70@75.

Omaha: Demand slow; supply ample; $85.

Ft. Worth: Demand slow; supply sufficient; $85, sacked, f.o.b. Ft. Worth, local manufacture.

Cincinnati: Demand fair; trend steady; supply adequate; $85 ton, sacked, f.o.b. Cincinnati.

BONE MEAL (STEAMED)

Buffalo: Demand good; trend steady; supply ample; $85 ton, sacked.

Seattle: Demand and trend steady; supply sufficient; $85 ton, ex-warehouse, truck lots.

Chicago: Demand slow; supply adequate; $70@85.

Boston: Demand steady; supply adequate; $86.

St. Louis: Demand good; trend firm; supply adequate; $90@92 ton, sacked.

St. Paul: Market firm; demand good; $89 in large lots.

Louisville: Demand dull; trend steady; supply normal; $75@80.

Ft. Worth: Demand good; supply very limited; 14% phosphorus, 31% calcium $76, 100-lb. paper-lined burlaps, f.o.b. Houston, last half March.

Portland: Demand slow; supply ample; trend unchanged $90.

Los Angeles: Demand fair; trend steady; supply ample; domestic $89.50.

BREWERS DRIED GRAINS

Philadelphia: Demand dull; supply fair; $52.50.

Buffalo: Demand poor; trend steady to lower; supply good; $46, bulk, Boston.

Louisville: Demand fair; trend steady; supply ample; $45 ton.

Boston: Demand and supply good; 22% $50; 26% 963.

St. Louis: Demand fair; trend firm; supply ample; $38 ton, bulk; $43 ton, sacked.

Cincinnati: Demand fair; trend steady; supply adequate; $49@49.50.

New Orleans: Demand slow; trend steady to lower; supply limited; 24% $52.50@54.

Ft. Worth: Demand slow; supply moderate; 26% nominal $50@51, prompt, delivered Ft. Worth.

Los Angeles: Demand fair; trend steady; supply ample; $54, f.o.b. Van Nuys.

Chicago: Demand slow; supply adequate; 24% $41.50@42.50.

BREWERS DRIED YEAST

Chicago: Demand good; supply limited; 10@11½¢ lb. in carlots; 10⅛@12⅛¢, l.c.l.

Los Angeles: Demand fair; trend steady; supply ample; 10¢.

Boston: Demand light; supply steady; 10¢ lb.

Omaha: Demand good; supply limited; 11⅛¢ lb.

Milwaukee: Demand good; supply limited; 10⅛@11⅛¢ lb. in carlots; 10⅝@12⅛¢ lb., l.c.l.

St. Louis: Demand good; supply limited; 10¢ lb. in carlots; 10⅛¢ lb. in 5-ton lots; 11¢ lb. in ton lots; 11⅛@12¢ lb. in less than ton lots.

Pittsburgh: Carlots 10¢ lb.; 5-ton lots 11¢; ton lots 11⅛¢.

New Orleans: Carlots 10¢ lb.; 5-ton lots 11¢; ton lots 11⅛¢.

Cincinnati: Carlots 10¢ lb.; 5-ton lots 11¢; ton lots 11⅛¢.

New York: Carlots 9⅛¢ lb.; 10-ton lots 10¢ lb.; 5-ton lots 10⅛¢ lb.; ton lots 11¢ lb., f.o.b. New Jersey.

Denver: Demand fair; trend steady; supply adequate; $11 cwt.

Portland: Demand slow; supply ample; trend unchanged; 13¢.

Louisville: Demand fair; trend steady; supply ample; 10¢ lb.

Buffalo: Demand good; trend firmer; supply ample; $10.75 cwt.

BUTTERMILK-CONDENSED

Portland: Demand slow; supply ample; trend unchanged; $4.75.

Chicago: Demand and supply fair; $3.25 @3.50 cwt. in carlots.

Los Angeles: Demand fair; trend steady; supply ample; 100-lb. drums $5.50; large barrels $4.75.

New Orleans: Demand fair; trend steady to firm; supply adequate; $4.25@4.35 cwt.

Ogden: Supply average; $4.90, 100-lb. drum.

Philadelphia: Demand moderate; supply fair; $4.25.

Louisville: Demand slow; trend firm; supply ample; $4.25 cwt.

Boston: Demand poor; supply ample; 4¢ lb.

CALCITE CRYSTALS AND FLOUR

(All prices net, including freight and tax)

New York: Crystals $12.48, flour $9.42.
Buffalo: Crystals $14.20, flour $10.20.
Toledo: Crystals $15.77, flour $11.77.
Boston: Crystals $14.62, flour $10.62.
Limecrest, N.J.: Crystals $9.50, flour $5.50.

CALCIUM CARBONATE

Seattle: Demand steady; supply ample; trend unchanged; $14 ton, ex-warehouse, truck lots.

Cincinnati: Demand fair; trend steady; supply adequate; $8@9.

Minneapolis: Plain $10; iodized (⅛ lb. KI per ton) $13.50; iodized manganesed $15.05.

Chicago: Plain $8.55 ton in 100-lb. bags, delivered.

Los Angeles: Demand fair; trend steady; supply ample; meal and flour $10.53 ton, carloads; grits $13.03 ton, carloads.

CHARCOAL

New Orleans: Demand slow; supply ample; trend steady; 40-lb. bags oak charcoal $2.40@2.50; 50-lb. bags poultry charcoal $2.60@2.65.

Boston: Demand slow; supply light; $95.

Chicago: Demand quiet; supply limited; poultry charcoal $102 ton in 50-lb. multiwalls.

Los Angeles: Demand slow; trend steady; supply ample; poultry charcoal, oak $2.40, 40-lb. bags in ton lots.

COCONUT MEAL

Seattle: Demand fair; trend steady; supply limited; $70 ton, ex-dock, 30-day shipment from Philippines.

Portland: Demand slow; trend steady; supply ample; $68.

Los Angeles: Demand slow; trend steady; supply ample; cake, ex-dock, March $66 @66.50.

COD LIVER OIL (FORTIFIED)

New York: Trend steady; price per lb. in 55-gal. drums (400 to 420 lb.): 300 ICU, 750 A 16@18¢, 1,500 A 17⅛@19½¢, 2,250 A 19@22¢, 3,000 A 19½@23¢; 600 ICU, 1,500 A 18@19½¢, 2,250 A 20@22¢, 3,000 A 22@23½¢; f.o.b. New York, New Jersey, Massachusetts or Pennsylvania; ranges include variance in offerings and f.o.b. shipping points.

Boston: Demand slow; supply good; 600 D, 2,250 A 22¢ lb.; 300 D, 2,250 A 21¢; 300 D, 1,500 A 18½¢.

CONDENSED FISH SOLUBLES

Los Angeles: Demand good; supply limited; trend steady; 4½¢.

Boston: Demand active; supply improved; 3½@3¾¢ lb.

CORN GERM MEAL

St. Louis: Demand good; trend firm; supply limited; $44 ton bulk, $49 ton in burlap sacks, St. Louis.

CORN GLUTEN FEED AND MEAL

(All quotations for all cities are sacked basis, bulk basis $5 less)

Minneapolis: Feed $49.77, meal $69.77.
Atlanta: Feed $56.92, meal $76.92.
Birmingham: Feed $55.18, meal $75.18.
Boston: Feed $54.15, meal $74.15.
Chicago: Feed $44, meal $64.
Cleveland: Feed $51.04, meal $71.04.
Denver: Feed $53, meal $73.
Ft. Worth: Feed $51.50, meal $71.50.
Indianapolis: Feed $48.50, meal $68.50.
Kansas City: Feed $44, meal $64.
Louisville: Feed $50.11, meal $70.11.
New Orleans: Feed $52.88, meal $72.88.
New York: Feed $53.69, meal $73.69.
Norfolk: Feed $53, meal $73.
Philadelphia: Feed $53.23, meal $73.23.
Pittsburgh: Feed $51.50, meal $71.50.
St. Louis: Feed $44, meal $64.

CORN OIL MEAL

New Orleans: Demand dull; trend steady; supply ample; $53.88@54.88.

Cincinnati: Demand fair; trend steady to lower; supply adequate; $51.80@52.10.

Louisville: Demand dull; trend easy; supply normal; $52.11 ton.

COTTONSEED OIL MEAL

Portland: Demand slow; trend firm; supply limited; $62, f.o.b. Los Angeles.

Ogden: Supply average; 41% $68@73.

Buffalo: Demand poor; trend steady to lower; supply fair; $69.25, sacked, Boston.

Louisville: Demand fair; trend steady; supply ample; old process $60.74; new process $57.74.

Philadelphia: Demand dull; supply fair; $68.

Seattle: Demand slow; trend steady; supply ample; $78 ton, delivered, 41% expeller process.

Cincinnati: Demand fair; trend steady; supply adequate; $58.50@60.

Wichita: Demand slow; supply ample; 41% $60.50.

Memphis: Demand dull; trend down; supply adequate; prime 41% protein, old process $60, sacked; new process 41% solvent $47, sacked.

New Orleans: Demand slow; supply ample; trend steady; 41% old process $67 @69.50.

Denver: Demand fair; trend steady; supply adequate; 41% solvent $64.

Ft. Worth: Demand fair; supply adequate; carlots, sacked, central and north Texas origin, 41% old process $59@61; solvent, 41% low gossypol $56.50, delivered Ft. Worth; pellets $2 additional.

Kansas City: Demand moderate; trend continues easier; for hydraulic $49.50@50.50, sacked, Memphis; solvent $46@46.50, sacked, Memphis.

Los Angeles: Demand moderate; trend steady; supply ample; $61@62.

Chicago: Demand slow; supply plentiful; hydraulic $61.50@62; solvent $57@57.50.

Boston: Demand slow; supply adequate; $70@70.50.

Omaha: Demand fair; supply adequate; 41% solvent $64, range size $67.50.

Atlanta: Demand slow; trend weak; supply ample; 41% $56, sacked, immediate.

A AND D FEEDING OIL

Buffalo: Demand steady; supply adequate; 300 D, 750 A 18½¢ lb.; 300 D, 1,500 A 20½¢ lb.; 300 D, 2,250 A 23½¢ lb.; 300 D, 3,000 A 26½¢ lb.; 600 D, 4,000 A 31¢ lb.; straight vitamin A feeding oil 10⅝@11½¢ per M. U., drum lots, drums included, basis Buffalo.

Denver: Demand fair; trend remains steady; supply adequate; 2,250 A, 300 D 22¢, 55-gal. drum included.

New York: Trend steady; price per lb. in 55-gal. drums (400 to 420 lb.): 300 ICU, 750 A 13⅛@17½¢, 1,500 A 15⅛@19½¢, 2,250 A 17⅛@21½¢, 3,000 A 19½@21¢; 600 ICU, 1,500 A 16@20½¢, 2,250 A 18@19½¢, 3,000 A 20@25¢; f.o.b. New York, New Jersey, Massachusetts or Pennsylvania; ranges include variance in offerings and f.o.b. shipping points.

Boston: Demand slow; supply good; 600 D, 1,500 A 17¢ lb.; 300 D, 2,250 A 18¢; 300 D, 1,500 A 16¢; 300 D, 750 A 15¢.

Minneapolis: 10,000 A 22¢ lb.; 300 D, 2,250 A 20¢ lb.; 300 D, 1,500 A 18¢ lb.; 300 D, 750 A 16¢ lb.

Chicago: Demand fair; supply plentiful; straight A feeding oil, with 10,000 units vitamin A per gram 7½@9¢ a million units of vitamin A, l.c.l., packed in 55-gal. drums, f.o.b. Chicago, drums included.

Seattle: Demand and trend steady; supply ample; 300 D, 2,250 A 23¢ lb., 300 D, 1,500 A 19¢ lb., 300 D, 750 A 17¢ lb., all ex-warehouse, drums included.

D ACTIVATED ANIMAL STEROL, POWDERED

Cincinnati: Demand poor; trend steady; supply ample; 1,500 ICU 11@12¢; 3,000 ICU 18¢, warehouse.

Kansas City: Demand fair; trend steady; supply adequate; 10⅛@11¢ lb.

New York: Trend steady; price per lb. in 50- and 100-lb. bags or 100-lb drums: 1,500 ICU 10@13.6¢ bagged, 11@12¢ drums; 3,000 ICU 16@19¢ bagged, 17@18¢ drums; f.o.b. New York and New Jersey.

DEFLUORINATED PHOSPHATE

Denver: Demand good; trend steady; supply adequate; $88.50 ton, trailer load.

Tupelo, Miss.: $49.50.

Houston: 19% $69.50.

Wales, Tenn.: $62.10.

Coronet, Fla.: Minimum phosphorus 17%, minimum calcium 34%, maximum fluorine .17% $66 net ton, f.o.b. Coronet in 100-lb. multiwall bags, $64 in bulk; minimum phosphorus 14.5%, minimum calcium 34%, maximum fluorine 0.145% $48 net ton, f.o.b. Coronet, in 100-lb. multiwall bags, $46 in bulk.

DICALCIUM PHOSPHATE

Cincinnati: 18% phosphorus $87@90.

Portland: Demand slow; supply ample; trend steady; $100.

Denver: Demand slow; trend steady; supply ample; $109.45.

Minneapolis: 18.5% phosphorus, 24% calcium granular or fine ground $88.54 ton, delivered; $3 ton less in bulk.

Trenton, Mich.: Minimum phosphorus 21%, maximum fluorine .01% guaranteed $94.50, f.o.b. Trenton, in 100-lb. multiwall bags; minimum phosphorus 18½%, maximum fluorine .01% guaranteed $83.25, f.o.b. Trenton in 100-lb. multiwall bags.

Adams, Mass.: Minimum phosphorus 18½%, minimum 25% calcium, maximum .01% fluorine guaranteed $74 ton, f.o.b. Adams, in 100-lb. multiwall bags. Freight equalized with nearest producing point, carload basis.

Columbia, Tenn: Minimum phosphorus 18½%, minimum 25% calcium, maximum .01% fluorine guaranteed $74 ton, f.o.b. Columbia, in 100-lb. multiwall bags. Freight equalized with nearest producing point, carload basis.

Bonnie, Fla.: Demand improving; supply adequate; minimum phosphorus 18½% granular $79.55. Freight equalized with closest dicalcium phosphate producing point, carload basis.

East St. Louis: 18½% phosphorus $83.25, bagged, f.o.b. cars.

Chicago: Demand fair; supplies adequate; stock food grade, 18.5% phosphorus, 20,000 lb. or more $83.25 per net ton in 100-lb. papers, basis Chicago Heights, Ill., or Nashville, Tenn., less than 20,000 lb. $93.25; 21% phosphorus, 20,000 lb. or more $94.50, basis Chicago Heights and Nashville, less than 20,000 lb. $104.50; freight equalized with St. Louis, Trenton, Mich., and Godwin, Tenn.; bulk, boxcars or hoppers $3 net ton less than bagged material.

DISTILLERS DRIED GRAINS

Cincinnati: Demand poor; trend steady; supply adequate; $58.60.

Louisville: Demand fair to good; trend easier; some lower offerings reported; quotations from local producers unchanged, with bourbon light at $57, dark $58 and solubles $76.

Boston: Demand spotty; supply short; light $63.75, dark $67.

Buffalo: Demand and supply fair; trend steady to lower; $60, bulk, Boston.

Philadelphia: Demand dull; supply light; $62.

New Orleans: Demand poor; supply light; trend steady; $57@58.

DRIED BEET PULP

New Orleans: Demand slow; trend firm; supply adequate; $64@65.

Seattle: Demand fair; trend strong; supply limited; $65 ton, delivered, carlots, California production.

Chicago: Plain pulp $61@62, molasses pulp $59.

Buffalo: Trend steady; supply fair; $68.50 @69, sacked, Boston.

Boston: Demand active; supply irregular; domestic $67.50@69, Canadian $68.

Atlanta: Demand slow; trend steady; supply ample; $72.50, sacked, immediate, nominal.

Ogden: Supply average; $45@50 ton.

Los Angeles: Demand slow; trend steady; supply ample; $51.02, paper bags.

Ft. Worth: Demand slow; supply moderate; carlots, 50-lb. papers $63@65, delivered Ft. Worth, March shipment.

DRIED BUTTERMILK

Ft. Worth: Demand very slow; supply extremely limited; local production $12 cwt., f.o.b. Ft. Worth.

Buffalo: Demand good; trend firmer; supply limited; $10.85 cwt.

Louisville: Demand slow; trend steady; supply ample; $9.50@10 cwt.

Boston: Demand poor; supply short; 11½¢ lb.

Ogden: Supply normal; $8.65, 100-lb. bag.

Wichita: Demand slow; supply adequate; $8.25 cwt.

Minneapolis: Market steady to easier at $9@10 cwt.

New Orleans: Demand slow; supply ample; trend easier; $11@11.75 cwt.

Los Angeles: Demand slow; trend steady; supply adequate; 11¢.

Chicago: Demand fair; supply adequate; medium acid 9⅛@9⅝¢; sweet cream 10⅛ @10⅛¢.

DRIED CITRUS PULP

Buffalo: Demand fair; trend steady; supply good; $35, sacked, f.o.b. Florida points.

Atlanta: Demand fair; supplies ample on pulp, limited on meal; trend steady; pulp $44, meal $41.50, sacked, immediate.

Boston: Demand fair; supply adequate; $35, f.o.b. Florida.

New Orleans: Demand good; trend steady; supply light; $41.50@45.

Los Angeles: Demand good; trend steady; supply scarce; f.o.b. southern California

producers' plants: orange $47 sacked, $42 bulk.

DRIED SKIM MILK

Chicago: Demand light; supply adequate; $11@11.50 cwt. in carlots.

Los Angeles: Demand fair; trend steady; supply ample; $13.75.

Portland: Demand slow; supply ample; trend unchanged; $13.

Boston: Demand poor; supply plentiful; 12¢ lb.

Minneapolis: Market unchanged at $11@12 cwt.

Cincinnati: Demand fair; trend steady; supply adequate; 11@12¼¢.

Philadelphia: Demand moderate; supply fair; $12.50.

Louisville: Demand slow; trend steady; supply ample; $11.50@12 cwt.

Buffalo: Demand good; trend steady; supply ample; $11.50 cwt.

DRIED WHEY

Buffalo: Demand poor; trend steady; supply fair; $6 cwt., delivered.

Louisville: Demand slow; trend steady; supply normal; $6@6.50 cwt.

Philadelphia: Demand moderate; supply fair; $6.

Ogden: Supply normal; $6.90, 100-lb. bag.

Seattle: Demand steady; supply good; trend unchanged; $7 cwt., ex-warehouse, l.c.l.

Cincinnati: Demand fair; trend steady; supply adequate; $6.

Portland: Demand slow; supply ample; trend unchanged; $6.50.

Denver: Demand fair; trend slightly down; supply adequate; $7.25 cwt.

Ft. Worth: Demand fair; supply adequate; carlots, standard $6 cwt., sacked, delivered Ft. Worth or any Texas point or in ton lots, f.o.b. warehouse, Ft. Worth.

Los Angeles: Demand fair; trend steady; supply ample; fortified $6.15; unfortified $6.

Chicago: Demand steady; supply adequate; $6 cwt. in carlots.

Kansas City: Trend steady; demand fair; straight grade $6 cwt. or $5 f.o.b. plant, plus freight whichever is lower; partially delactosed $6.25 cwt.

Boston: Demand slow; supply plentiful; 6¢ lb.

FISH MEAL

Chicago: Demand and supply fair; menhaden fish meal, 60% protein, f.o.b. East Coast $138@143 ton; 60% blended West Coast $130; Northwest herring-salmon blend $130; herring meal 73% protein $1.75@1.90 a unit of protein.

Los Angeles: Demand moderate; trend steady; lighter offers; $2.25@2.30 a unit of protein.

Boston: Demand active; supply steady; $143@145.

Atlanta: Demand fair; trend steady; supply ample; 60% $148, sacked, immediate.

Ft. Worth: Demand fair; increased offerings; 60% Peruvian $148, f.o.b. Houston, last half March.

Denver: Demand fair; trend weak; supply very good; 70% herring $149 ton.

Portland: Demand slow; supply ample; trend weak; $1.95 a unit, f.o.b. Vancouver; $2.25 a unit, California.

Cincinnati: Demand fair; trend steady; supply adequate; $150@160.

Seattle: Demand fair; trend steady; supply good; Canadian herring meal $2.05 a unit protein, delivered Seattle; local fish meal $2.30 a unit protein, f.o.b. local packing plant.

Minneapolis: Market steady to easier; demand fair; 70% herring meal $1.75 a unit of protein, West Coast; 60% meal $150@152, Minneapolis.

Ogden: Supply normal; $2.30 a unit, f.o.b. Coast; 65% $171@173.

Louisville: Demand slow; trend easy; supply normal; $155@160 ton.

Buffalo: Demand quiet; trend steady to lower; supply ample; 60% protein menhaden $150 ton, bulk; $153, sacked.

FEED INGREDIENTS
Fish Meal • Scrap • Solubles
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2 Broadway NEW YORK 4, N. Y.
Tel. HAnover 9-9195

HAY

Buffalo: Demand very weak; No. 2 timothy $18 ton; No. 2 alfalfa $25@28; straw, strong $12@16.

Louisville: Demand fair; trend steady; supply heavy; No. 1 hay, timothy, clover, alfalfa and mixed timothy and clover $30, No. 2 $28; lespedeza $25 and $22; straw $14@15.

Philadelphia: Demand and supply fair; $28.

Ogden: Supply normal; $1.25 bale; $24@30 ton in the barn.

Seattle: Demand strong; trend firm; supply tight; $45 ton, delivered, carlots, for U.S. No. 2 green.

New York: Demand routine; trend steadier on top grades; supply limited on top grades, ample on lower grades; timothy, No. 1 $30@34, No. 2 $27@29, No. 3 $25@27, New York rate points.

Boston: Demand steady; supply plentiful; No. 2 timothy $35.

St. Louis: Demand fair; trend steady; supply ample; No. 1 timothy $25@28 ton, No. 1 clover $18@20 ton, No. 1 alfalfa $21@25, No. 1 prairie $25@28 ton, straw $14@15 ton.

Cincinnati: Demand slow; trend steady; supply adequate; No. 1 timothy (new) $21; first cutting No. 1 alfalfa (new) $21; second cutting, No. 1 $25; fancy No. 1 clover and timothy mixed $27; No. 1 red clover $22; bright wheat or oat straw $18.

Wichita: Demand slow; supply plentiful; prairie $18@22, alfalfa $20@24.

Portland: Demand good; trend higher; supply limited; $44@45 ton.

Ft. Worth: Demand fair for alfalfa, practically nil for others; supply sufficient; carlots, baled, No. 1 alfalfa $36@38, No. 2 $34@36; prairie, No. 2 $26@28; Johnson grass, No. 2 $24@26, delivered TCP.

Los Angeles: Demand fair; trend steady; supply ample; U.S. No. 1 $32@34; U.S. No. 2, leafy $30@32; U.S. No. 2, green $31@32; U.S. No. 2 $28@29.50.

HOMINY FEED

New Orleans: Demand fair; trend steady to lower; supply adequate; $48.50@51.

Cincinnati: Demand fair; trend strong; supply very limited; $50.50@51.50.

Boston: Demand quiet; supply adequate; $60@61.

Seattle: Demand slow; trend steady; supply ample; $61 ton, delivered, sacked.

Louisville: Demand fair; trend stronger; supply ample; carlots offered at $51.20; some truck lotes from small country mills at from $45 up.

Buffalo: Demand fair; trend steady to higher; supply poor; $54, bulk, Boston.

Chicago: Demand good; supply tight; $49@49.50.

Kansas City: Demand moderate; trend about steady; $44.50@45, sacked, Kansas City.

Memphis: Demand poor; trend steady; supply ample; white $47, yellow $52.

LINSEED OIL MEAL

Portland: Demand slow; trend firm; supply limited; $64, f.o.b. Los Angeles.

Louisville: Demand dull; trend stronger; supply ample; old process $71.09; new process $65.09.

Philadelphia: Demand and supply fair; $78.

Seattle: Demand slow; trend easy; supply good; $78 ton, delivered, carlots, 34% protein expeller.

Cincinnati: Demand fair; trend easy; supply adequate; $61.75@68.75.

Wichita: Demand fair; supply sufficient; 34% $75.

Boston: Demand quiet; supply improved; $70@72.

Omaha: Demand fair; supply adequate; 34% expeller $67.50, pellets $70; 36% solvent $61, pellets $63.50.

New Orleans: Demand slow; supply ample; trend steady; 32% or higher $68.75@71.25.

Minneapolis: Market easier; demand limited except for some fair export inquiry. Quotations: 36% $46, bulk, Minneapolis; 22% flaxseed screenings oil feed $33, bulk, Minneapolis.

Denver: Demand fair; trend steady; supply adequate; 36% solvent meal $68.

Ft. Worth: Demand slow; supply adequate; carlots, 36% or better: March $68.92, April-August $70.42, delivered Ft. Worth; pellets $2.50 premium.

Chicago: Linseed oil meal continued to slip during the week ending March 14, reflecting seasonal circumstances; solvent linseed oil meal $56.50; expeller $65.

Los Angeles: Demand slow; trend steady; supply ample; $62@63.

Kansas City: Market weaker; demand slow; $45.50@46, bulk, Minneapolis, for solvent; $51.50@53, bulk, Minneapolis, old process.

MALT SPROUTS

Cincinnati: Demand fair; trend steady; supply adequate; No. 1 $38.50@39.

Chicago: Demand and supply fair; No. 1 $31.50@32.

St. Louis: Demand fair; trend steady; supply ample; No. 1 bulk $33 ton, No. 1 sacked $38 ton, No. 2 bulk $30 ton.

New Orleans: Demand fair; trend steady; supply adequate; No. 1 $40@41.

MEAT SCRAPS

Chicago: Demand slow; supply adequate; 50% protein $65@67.50; 55% $80.

Los Angeles: Demand and trend steady; supply ample; $1.60 a unit of protein.

Kansas City: Fair demand; offerings moderately good; trend a little easier at $67.50@70, sacked, Kansas City.

St. Paul: Market lower; demand fair; supplies ample; 50% meat and bone scraps $70; 55% $73.

Boston: Demand fair; supply steady; $1.10 a protein unit; converted 50% $67.50.

St. Louis: Demand fair; trend steady; supply ample; 50% $68@72 ton bulk, $73@77 ton in paper sacks, $72@76 ton in burlap sacks.

Omaha: Demand slow; supply ample; $72.50.

Ft. Worth: Demand good; supply moderate; meat and bone, 50% $67@69, sacked, f.o.b. or delivered Ft. Worth.

New Orleans: Demand slow; supply ample; trend steady; 50% $75.50@82.50.

Portland: Demand slow; trend weak; supply ample; $1.40 a unit.

Wichita: Demand good; supply insufficient; 50% $70, f.o.b. plant; 55%, no quotations, no offerings.

Cincinnati: Demand fair; trend steady; supply adequate; 50% $67 ton, sacked, f.o.b. Cincinnati.

Seattle: Demand slow; trend easy; supply limited; $67.50 ton, ex-warehouse, truck lots, 50% protein.

Ogden: Supply average; $75 ton, in 100-lb. bags.

Louisville: Demand slow; trend weak; supply good; $65@70 ton.

Buffalo: Demand fair; trend steady; supply good; 50% meat scraps $70 ton, bulk; $73, sacked.

MILLET

St. Louis: Demand fair; trend steady; supply ample; recleaned Early Fortune $3.50 cwt., sacked; recleaned White Proso $3.60 cwt., sacked.

MILLFEED

Minneapolis: Market easier, particularly for middlings; demand limited; offerings heavier. Quotations: bran $40@40.50, standard midds. $39.50@40, flour midds. $43.50@44, red dog $45.50@46.

Kansas City: A shade firmer after several days of inactivity; trend slightly stronger; demand fair; offerings moderate; bran $37@37.50, shorts $37.75@38.25, sacked, Kansas City.

Wichita: Demand fair, mostly nearby; supply sufficient; basis Kansas City, March 13: bran $37@37.50, shorts $38@38.50; prices were unchanged, compared with the preceding week.

Denver: Demand fair to slow; trend slightly weaker; supply adequate; bran $40.25, shorts $41.50, mill run $40.75.

Ft. Worth: Demand fair; supply sufficient; carlots, burlaps, prompt, wheat bran $44.50@45.50, gray shorts $45@46, delivered Texas common points; unchanged on bran and 50¢ lower on shorts, compared with previous week.

Omaha: Demand fair; supply good; bran $37.50, shorts $38.25; standard midds., bulk $35.50.

Chicago: Weakening prices were reported during the week ending March 14. Demand fell off, while higher production by flour mills placed more offals on the market. Quotations March 14: bran $42.50@43, standard midds. $42.50, flour midds. $47@47.50, red dog $49@50.

Cincinnati: Demand fair; trend steady; supply adequate; bran $48@49.50, middlings $47@48.

St. Louis: Demand slow; trend steady; supplies heavy; bran $41.50@42, shorts $42@42.50, St. Louis switching limits.

Louisville: Demand fair; trend slightly stronger on some items, steady on others; supply ample; bran $47.20, mixed feed $47.70, shorts $47.20, standard midds. $49.70.

Buffalo: Increased flour output caused a little oversupply of millfeeds and prices worked lower. Bran ended 50¢ lower; middlings were down $1 and heavy feeds were unchanged after being higher earlier. Quotations March 14: bran $46.50@47.25, standard midds. $43.50@46.50, flour midds. $50@53, red dog $50@52.

Philadelphia: Demand spotty; supply ample; bran $53, standard midds. $54, red dog $58.

New York: Demand fair; trend steady; supply sufficient; bran $54@54.50, standard midds. $54@54.50.

Boston: Demand active; supply spotty; bran and middlings $55.

Memphis: Demand poor; trend lower; supply ample; wheat bran $44, gray shorts $45, standard midds. $44.50.

New Orleans: Demand fair; trend firmer; supply limited; bran $47@47.50, shorts $48@48.50.

Seattle: Demand slow; trend easy; supply good; $41 ton, delivered common transit points, carlots.

Portland: Demand slow; trend weak; supply ample; $40.

Ogden: Supply normal; to Utah and Idaho: red bran and mill run $40, middlings $45; to Denver: red bran and mill run $47, middlings $52; to California: red bran and mill run $47.50, middlings $52.50, f.o.b. San Francisco and Los Angeles.

Los Angeles: Demand better; supply ample; trend steady; mill run, Utah-Idaho billing, sacked $48.50@49; red bran, delivered CCP, sacked $55@55.50.

MINERAL FEED

Ogden: Supply normal; $105 ton, 50-lb. blocks; $95 ton, granular, 50-lb. bags.

Seattle: Demand steady; supply ample; trend unchanged; high phosphorus mixtures $65 ton; competitive brands $44 ton.

Sioux City: 50-lb. mineral blocks, 8.3% phosphorus $92; 7.5% phenothiazine sheep mineral blocks $4 each.

Ft. Worth: Demand fair; supply ample; all-purpose granules $52, block $92; mineral phosphorus 6%, granules $95, block $105; cattle-sheep mineral, 7% phosphorus, granules $92, block $101; hog mineral phosphorus 3½%, granules $82; phosphorus 2% $69 (all in 50-lb. paper bags).

Wichita: Demand good; supply insufficient; all-purpose with iodine, 50-lb. blocks $92.50; 100-lb. bags $87.50, f.o.b. plant.

Portland: Demand slow; supply ample; trend unchanged; $42.

MOLASSES

Buffalo: Demand good; trend steady; supply fair; 16¼¢ gal., f.o.b. Albany.

Louisville: Demand fair; trend steady; supply normal; 13¼¢ gal., tank car lots, Gulf ports.

Seattle: Demand and trend steady; supply good; $26 ton, f.o.b. Seattle, tank car lots.

Cincinnati: Demand fair; trend steady; supply adequate; 13@13½¢ gal., New Orleans.

Portland: Demand slow; supply ample; trend unchanged; $26.

Minneapolis: Market steady at 13½¢ gal., f.o.b. New Orleans; $26 ton, West Coast.

Beaumont: Trend steady; blackstrap 15¢ gal., tank cars, tank wagons, f.o.b. Beaumont.

New York: Trend steady; blackstrap 16¢ gal., tank cars, tank wagons, f.o.b. New York.

Atlanta: Citrus molasses—demand good; supply limited; trend strong; $30 ton, bulk, f.o.b. Florida producing points, immediate.

Boston: Demand steady; supply ample; 16¼¢ gal., tank cars.

Memphis: Demand poor; trend down; supply adequate; blackstrap 13¼¢ gal., tank car, f.o.b. New Orleans.

New Orleans: Demand fair; trend steady;

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supply adequate; 13¾@14¢ gal., in tank cars, f.o.b. New Orleans.

Denver: Demand fair; trend steady; supply adequate; 13½¢, New Orleans.

Ft. Worth: Demand good; supply moderate; blackstrap 16¢ gal., f.o.b. Houston, carlots, delivered Ft. Worth; cars and/or trucks $32.65, seller's market price on date of shipment; maximum 16¢ March, 16½¢ April-May shipment.

Kansas City: Demand moderate; offerings adequate; trend about steady; mostly 13¼¢ gal., for nearby; ¼¢ higher each month through June, basis New Orleans.

Los Angeles: Demand good; trend steady; supply ample; $35, f.o.b. tank cars; $35.25, f.o.b. tank trucks, both Los Angeles harbor.

NIACIN

New York: Trend firm; $8 kilo, 50-kilo lots; $8.10 kilo, 10-kilo lots; $8.20 kilo, 5-kilo lots; $8.30 kilo, 1-kilo lots; freight prepaid or paid to destination.

OAT PRODUCTS

Portland: Demand good; trend firm; supply ample; rolled $67, ground $65, cleaned $84.

Louisville: Demand fair; trend steady; supply ample; reground, easy $18.70; rolled oats $83.70; feeding oatmeal $77.70; pulverized white oats $46.30; crimped white oats $65.30, the latter up 50¢.

Chicago: Demand stagnant; supply adequate; reground oat feed $13; fine ground feeding oatmeal $72@74; feeding rolled oats $80@83.

Minneapolis: Better demand was noted for feeding rolled oats and oatmeal, but trade is still rather spotty. Quotations: feeding rolled oats $31@32, standard pulverized $41@43.50, feeding oatmeal $65@67, reground oat feed $14, steamed crimped oats $84.

Boston: Demand steady; supply adequate; white pulverized $49.50@53; reground oat feed $19@20.50.

St. Louis: Demand fair; trend steady; supply ample; reground oat feed $14 in 100-lb. burlap bags; pulverized white oats $45 ton, choice $46.

Los Angeles: Demand fair; trend steady; supply ample; white pulverized $62.

Ft. Worth: Demand fair; supply adequate; oat millfeed $41.80; reground oat millfeed $24.55, delivered.

New Orleans: Demand very light; trend steady; supply adequate; steam crimped oats $66@68; pulverized white oats $46@51; mixed feed oats $39@41.

Memphis: Demand poor; trend steady; supply ample; 2½% protein, reground oat feed $17.

Cincinnati: Demand fair; trend steady; supply adequate; reground oats $20@21; pulverized white oats $46; rolled oats $86.

Seattle: Demand and trend steady; supply good; feed oats $64 ton, ground oats $64 ton, rolled oats $68 ton, all ex-warehouse, l.c.l.

Philadelphia: Demand dull; supplies fair to light; pulverized white oats $49.50, domestic oat feed $32.50, Canadian $29.50.

OYSTER SHELL

Louisville: Demand good; trend steady; supply normal; in 80-lb. packages, ton $20.50; with 50¢ extra in 50-lb. packages, and 75¢ over 80-lb. packages, when in 25's.

Seattle: Demand steady; supply good; trend unchanged; eastern $35 ton, western $28 ton, both ex-warehouse, l.c.l.

Cincinnati: Demand fair; trend steady; supply adequate; $20.45.

Portland: Demand slow; supply ample; trend unchanged; western $30, eastern $35; granite and crystal grits, both $25.

New Orleans: Demand fair; trend down slightly; supply ample; $15@16.35, local origin.

Los Angeles: Demand and trend steady; supply ample; local $15.25, eastern $26.

Boston: Demand and supply steady; in paper $22.34.

PEAT MOSS

New Orleans: Demand slow; supply adequate; trend steady; standard bales German moss $3@3.45.

Boston: Demand steady; supply adequate; $3@3.10 bale.

Chicago: Demand good; supply limited; $3.65@3.75 standard 7½ cu. ft. bale.

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Portland: Demand good; supply ample; trend unchanged; $3.25.

Philadelphia: Demand and supply fair; $3, f.o.b. pier.

PEANUT OIL MEAL

Atlanta: Demand slow; trend steady; supply limited; 45% $58.50, sacked, immediate.

POTASSIUM IODIDE, U.S.P.

St. Louis: Demand fair; trend firm; supply ample; 100% pure potassium iodide, U.S.P., 250-lb. average in drums $1.90, 100-lb. lots in fiber drums $1.92; potassium iodide calcium stearate mixture, 225 lb. in leverpak drums $1.81, 100-lb. lots in fiber drums $1.85.

New York: Trend steady; U.S.P. granulated and powder, free-flowing powder $1.90 lb. in 200-lb. lots, $1.92 lb. in 100-lb. lots, $1.95 lb. in 25-lb. lots; 90% KI in calcium stearate, calcium carbonate or magnesium carbonate mixtures $1.81 lb. in 200 and 250 lb. lots, $1.83 lb. in 100 lb. lots, $1.86 lb. in 25 lb. lots, f.o.b. New Jersey; freight prepaid except on 25 lb. lots.

RIBOFLAVIN

New York: Trend firm; feed grade (in feed supplements): 4½¢ gram in 2.63 to 16 gm./lb. mixtures, freight prepaid or paid to destination.

RICE BY-PRODUCTS

Los Angeles: Demand moderate; trend steady; supply ample; bran $67.81.

Ft. Worth: Demand fair; supply scarce; carlots, rice bran $33@34, prompt shipment, f.o.b. south Texas rice mills; hulls $3@4, f.o.b. mills.

Atlanta: Demand slow; trend steady; supply limited; bran $44, sacked, immediate.

New Orleans: Demand slow; trend easier; supply limited; $48@49 on bran; no quotes on hulls.

Memphis: Demand poor; trend steady; supply small; bran $35, sacked, f.o.b. Arkansas points.

SCREENINGS

Minneapolis: Market quiet, with both demand and offerings limited. Quotations: country run $14@18, lights $2@12, mediums $12@20, heavies $20@30; Canadian $12, bulk, Duluth; Canadian ground $22, sacked; flax screenings $17.

Chicago: Demand moderate; supply plentiful; ground grain screenings $25.50; Canadian, bulk $18.50.

Denver: Demand fair; trend steady; supply adequate; grain screenings $35.

New Orleans: Demand fair; trend steady; supply plentiful; 3/64-in. grind $34@36.50.

Cincinnati: Demand fair; trend steady; supply adequate; Canadian $24@25; barley $13@19; both bulk, delivered.

Buffalo: Demand and supply fair; trend steady to higher; ground, sacked $28, New York; unground, bulk $19.50, New York.

SOFT PHOSPHATE WITH COLLOIDAL CLAY

Chicago: $22@22.75.
Kansas City: $22.15@22.80.
St. Louis: $21.40@22.
Des Moines: $22.50.
Philadelphia: $21.55@22.15.
Minneapolis: $23.15@23.85.
Buffalo: $22.50@23.10.
Atlanta: $18@18.70.
Memphis: $19.40@19.95.

SORGHUMS

Cincinnati: Demand fair; trend steady; supply adequate; $2.68.

Ft. Worth: Demand fair; supply sufficient; carlots, bulk, No. 2 yellow $2.22@2.27, delivered TCP.

Los Angeles: Demand fair; trend steady; supply ample; No. 2 milo, delivered CCP, $2.75.

SOYBEAN OIL MEAL

Ft. Worth: Demand dull; supply sufficient; carlots, 44% $66@70.50 depending on origin; truck lots $61.50@63.

Portland: Demand slow; trend higher; supply ample; March $44.

New Orleans: Demand slow; supply plentiful; trend steady; 40% $65@68.

Chicago: Trading was slow the week ending March 14, with potential buyers waiting further market developments before filling their needs. Quotations: 44% protein soybean oil meal $56@56.50.

Minneapolis: Better demand, with some processors reported sold up for nearby, improved prices this week $1@2.50. Quotations: $41@42, bulk, Decatur.

Boston: Demand cautious; supply ample; $45.50, f.o.b. Decatur.

Omaha: Demand fair; supply adequate; 44% solvent $59; 41% expeller $62.50.

Atlanta: Demand slow; trend weak; supply ample; 44% $64, sacked, immediate.

Decatur: Demand fair; supply adequate; 44% bulk, unrestricted $46@46.50.

Los Angeles: Demand slow; supply ample; trend steady; $74.25@74.75, delivered CCP.

Kansas City: Demand slow; offerings adequate; trend soft; for Kansas City and West $42@43.50, bulk, Decatur; unrestricted $46@46.50, bulk, Decatur.

Denver: Demand fair; trend steady; supply adequate; 44% solvent $67.

Memphis: Demand heavy; trend steady; supply ample; prime 44% solvent $53.50, sacked, f.o.b. Memphis.

Wichita: Demand slow; supply sufficient; 41% $53, f.o.b. Wichita.

Cincinnati: Demand fair; trend steady; supply adequate; $46@46.50, bulk, Decatur.

Seattle: Demand and trend steady; supply ample; $73.50 ton, delivered, carlots, sacked.

Ogden: Supply normal; $35@90.

Philadelphia: Demand spotty; supply ample; $47.50, bulk, Decatur.

Louisville: Demand slow; trend easy; supply ample; $57.61 ton.

SUNFLOWER SEED

St. Louis: Demand fair; trend steady; supply ample; large black $17 cwt., large gray $16.50 cwt., medium black $14.50 cwt., medium gray $14 cwt., small black and gray $10.50 cwt.

TANKAGE

Chicago: Demand good; supply adequate; 60% protein $65@75.

Los Angeles: Demand fair; trend steady; supply ample; $1.40 a unit of protein.

Kansas City: Market weak; demand only fair; 60% digester $65, sacked, Kansas City.

Omaha: Demand slow; supply ample; $72.50.

St. Louis: Demand fair; trend steady; supply ample; 60% $72@76 ton bulk, $77@81 ton in paper sacks, $76@80 ton in burlap sacks.

St. Paul: Market lower; demand fair; supplies ample; 60% digester $67.

Ft. Worth: Demand fair; supply moderate; 60% digester $76@78, f.o.b. Ft. Worth.

New Orleans: Demand fair; trend firm; supply ample; 60% $75.50@80, local origin.

Wichita: Demand good; supply ample; 60% $70, f.o.b. plant.

Cincinnati: Demand fair; trend easy; supply adequate; 60% digester $67@73.

Louisville: Demand dull; trend steady; supply good; $67.50@72.50.

WHEAT GERM MEAL

New Orleans: Demand fair; trend steady; supply light; $64@65.

Buffalo: Demand fair; trend steady; supply poor; commercial grade $72, sacked, f.o.b. Buffalo.

Chicago: Market stronger at $75.

COTTONSEED OIL MEAL FUTURES

Closing prices of cottonseed oil meal (41% protein) on the Memphis Merchants Exchange in dollars per ton (bulk):

	March 9	March 12	March 13	March 14	March 15
March	42.50@ 42.75	....@ 42.00	41.25@ 42.25	40.50@ 41.00	....@ 39.50
October	48.50@ 49.00	48.40@ 49.25	48.40@ 48.75	47.90@ 48.25	47.00@ 47.50
May	43.75@ 44.50	43.00@ 43.75	43.75@ 43.25	42.25@ 43.45	40.75@ 41.45
July	46.00@ 46.75	45.00@ 45.50	....@ 45.00	44.00@ 45.25	43.00@ 44.00
September	47.25@ 48.00	47.25@ 48.25	47.00@ 48.50	46.50@ 48.00	43.50@ 47.00
December	48.25@ 49.25	48.50@ 49.00	48.50@ 49.00	47.75@ 48.75	47.00@ 47.50
January	49.00@ 50.00	48.75@ 49.50	48.50@ 49.00	47.25@ 48.75	47.00@ 48.50

SOYBEAN OIL MEAL FUTURES

Closing prices of soybean oil meal (basis Decatur, Ill.) on the Chicago Board of Trade and on the Memphis Merchants Exchange, in dollars per ton (bulk basis):

CHICAGO

	March 9	March 12	March 13	March 14	March 15
March	46.70@ 46.90	....@ 46.65	....@ 46.50	46.35@ 45.95	....@ 45.45
May	48.65@ 48.70	....@ 48.75	48.40@ 48.55	....@ 47.90	....@ 47.25
July	....@ 49.90	50.10@ 50.25	51.10@ 50.15	49.50@ 49.50	48.80@ 48.90
August	50.70@ 50.90	50.85@ 51.00	50.80@ 50.85	50.20@ 50.25	49.60@ 49.75
September	49.25@ 49.75	49.50@ 49.90	49.50@ 49.75	49.10@ 49.35	48.90@ 49.10
October	47.60@ 48.25	47.50@ 48.00	47.25@ 47.75	47.00@ 47.40	46.80@ 46.95
December	47.50@ 48.25	47.50@ 48.00	47.25@ 47.75	....@ 47.35	46.90@ 47.00

MEMPHIS

	March 9	March 12	March 13	March 14	March 15
March	46.40@ 46.75	46.40@ 47.00	45.25@ 46.00	45.00@ 45.25	44.75@ 45.60
May	....@ 48.70	48.70@ 48.75	....@ 48.50	....@ 47.90	46.90@ 47.25
July	....@ 49.85	49.85@ 50.00	50.05@ 50.30	....@ 49.55	....@ 48.80
September	....@ 49.25	49.25@ 49.60	49.30@ 49.50	49.15@ 49.25	....@ 48.75
August	50.70@ 50.80	50.70@ 50.90	....@ 50.85	50.40@ 50.65	....@ 49.60
October	47.75@ 48.25	47.75@ 48.10	47.70@ 48.00	47.25@ 47.50	46.80@ 47.00
December	47.75@ 48.25	47.75@ 48.10	....@ 47.70	47.25@ 47.50	....@ 47.00
January	47.35@ 48.25	47.75@ 48.10	47.65@ 48.00	47.50@ 47.75	46.75@ 47.50

MILLFEED FUTURES

The following is a comparison of settling prices at Kansas City for March 8 and 15:

Bran—	March 8	March 15
March	$37.75@ 38.50	$37.35@ 37.75
April	38.75@ 39.00	38.00@ 39.00
May	36.00@ 37.00	35.75@ 37.00
Shorts—		
March	$38.50@ 39.00	$38.10@ 38.75
April	....@ 41.25	39.75@ 41.50
May	....@	....@ ....

POULTRY OUTPUT

(Continued from page 1)

beans in the sensitive months as election time nears.

Also, possible developments on the farm legislative front may bring higher feed grain prices this year.

The poultry industries probably should look deeply into the signs indicated by USDA policies and prepare to adjust their ideas on costs and markets to these conditions.

Meanwhile, the indicated big production of poultry meat, in retail pounds of edible meats, is nothing less than another attraction for the consumer against a heavy supply of beef and pork products.

Poult Output

The turkey industry appears to be rapidly becoming the "Disneyland" of production. The heavy breed poult hatch in February totaled 4,800,000, compared with 2,744,000 a year earlier—a robust increase. The hatch included about 1.2 million heavy whites.

The hatch of light breed turkey poults totaled 797,000, compared with 1,104,000 in February last year. Thus the decline in production of this new type of turkey continues.

There's no let-up in the booming increases in heavy breed poult production, however. Eggs in incubators on March 1 totaled 16,187,000, compared with 12,109,000 a year earlier.

Light breed eggs in incubators March 1 totaled 1,380,000, compared with 1,699,000 on the same date last year. Heavy white varieties totaled 2,980,000.

The turkey figures in the hatchery report are a further indication that the industry is over-extending in heavy breeds.

An exhaust valve in the turkey deal is the decline in production of light weight varieties, and the industry has an ace-in-the-hole as it markets the heavy breeds at light weights.

The cumulative total of turkey poult production compared with last year is certainly not bullish pricewise. The record appears to spell out bargain prices for turkey consumers. The net increase in production of heavy breed poults for January-February is 68% over last year, with the real big production months still ahead. At the same time, light breed poult output was off 32% for January-February.

Chick Production

Total hatchery production of chicks in February was 198,171,000, compared with 163,360,000 a year earlier. Of the total, 112,194,000 were broiler chicks, compared with 92,115,000 a year earlier.

Meanwhile, with demand strong for chicks for both broilers and egg production, an increased hatch in March was in prospect. Numbers of both broiler and flock replacement chick eggs in incubators on March 1 were up from a year earlier—broiler eggs up 23% and non-broiler eggs up 10%.

The broiler and turkey industries in particular are seen as being made of stern speculative stuff, even though increased efficiency has brought lower production costs. Otherwise, they could not undertake the currently indicated production plans.

Also, there apparently has been a failure to recognize the clear price intentions of USDA for certain feed commodities for the balance of this crop year.

BROILERS

(Continued from page 1)

meat-feed ratio. A pound of meat would buy 5 lb. of feed compared to 4.9 a week earlier.

Delmarva growers marketed 2,627,000 broilers during the week ending March 10. This was 1% more than the previous week and 32% more than the corresponding week last year. Marketings were 95% of the average weekly placements 10 to 13 weeks earlier.

Prices paid for hatching eggs f.o.b. Boston on March 8 and 13 were 48 @49¢.

Nationwide, for 22 reporting states, chick placements totaled 24,217,000 for the week. This was 2% more than during the previous week and 22% more than during the same week a year ago.

Egg settings in 22 states totaled 35,630,000. This was 1% more than the previous week and was 23% more than during the same week a year ago.

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Excellent References

UP OR DOWN?

By Leonard W. Schruben

Agricultural Economist, Kansas State College

ALFALFA SEED PRICE TRENDS

Many feed dealers handle legume and grass seeds. More than usual interest in the seed situation has developed this year because of the discussion of the soil bank plan. A general surplus of some kind of seed could suddenly become a shortage. Now is a good time to plan for your 1956 seed operation. In making decisions, you will need to take many things into account, including price prospects.

A factor which has come up affecting seed prices is the proposal for a soil bank plan as a partial solution to the farm surplus problem. Key feature is removal from production of some land now used to produce wheat, cotton and other surplus crops. Some of this land would be seeded to legumes, grass and trees. This new program could make heavy demands on field seeds of all kinds, and especially legume seed.

Alfalfa, clover and lespedeza seed supplies in the U.S. are about one third larger this year than last, according to U.S. Department of Agriculture reports. These supplies also are about 12% above a recent five-year average. These seeds make up more than one half of the total legume and grass seed supply.

If we assumed normal plantings and a normal carryover at end of the 1956 season, some kinds of seed would be in short supply and others in ample supply. Some in short supply would be red clover, sweet clover, smooth brome, redtop, orchardgrass, white clover, crested wheatgrass or Kentucky bluegrass. However, there would be ample supplies of alfalfa, ryegrass, Sudangrass, timothy, ladino clover and alsike clover. Of course, new soil programs might make this situation change in a hurry if they are put into operation soon.

The heavy black line in Exhibit 1 pictures usual seasonal trends in alfalfa seed prices. It is an index of prices received by Kansas farmers from 1913 through 1954. Kansas is a large alfalfa seed-producing state. A study of alfalfa seed marketing recently was completed by Julius Brosa, a graduate student in agricultural economics at Kansas State College. We are indebted to him for working out the accompanying exhibits.

As can be seen from Exhibit 1, prices of alfalfa seed sold by farmers tend to be higher in April and May than other seasons. Shaded band around solid line indicates the range you might expect any one year. About two thirds of the years fell within that range.

During the last 20 years, prices received by Kansas farmers have gone up 10 years from March to April. They went down 10 of the years. From April to June prices went up only four years, remained steady one year, and went down 15 years.

This comparison is shown in Exhibit 2: Here is how you use it. First, find the current month in the left hand column. In this case it is March. Now read over on this same line for the per cent of times prices have gone up. Under April, for example, is a 50. This means that half of the years prices have gone up from March to April during the last 20 years.

Of course, these past price patterns may not be followed this year. Situations change a great deal from one season to another. At present, odds favor some early spring price increase for most field seeds, even without a large program of seeding such as the soil bank plan.

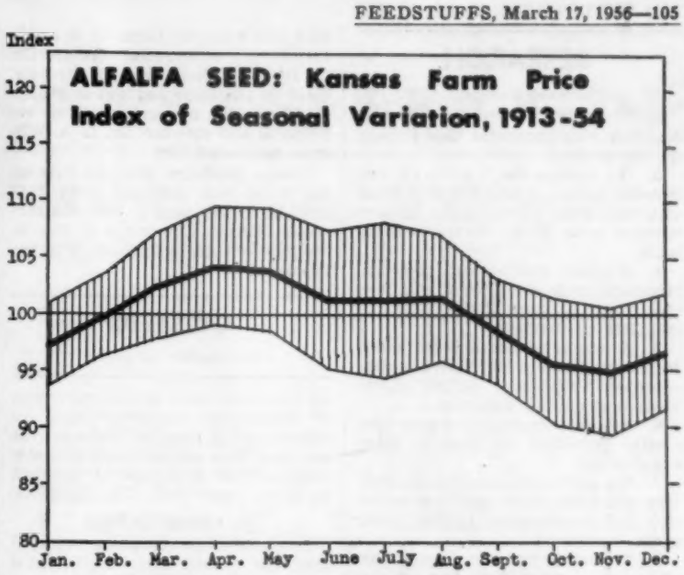

EXHIBIT 1—Seasonal variation of alfalfa seed prices.

SUBSEQUENT MONTH

Base month	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
January	75	90	95	85	60	65	65	65	60	60	55	47											
February		60	75	70	40	35	55	60	50	55	50	47	58										
March			50	50	30	30	55	50	45	55	50	47	53	53									
April				35	20	25	40	50	45	45	40	42	53	58	53								
May					20	25	45	40	35	45	45	42	47	42	42	42							
June						40	50	50	45	45	45	53	58	58	58	53	32						
July							65	65	50	50	50	47	63	68	74	63	37	42					
August								35	35	35	40	37	42	42	42	47	32	37	53				
September									35	25	40	37	63	58	58	58	37	42	63	58			
October										60	55	68	79	74	74	74	68	68	68	63	63		
November											60	63	79	79	74	79	63	74	68	63	38	68	
December												47	74	95	90	84	53	74	68	63	63	63	63

EXHIBIT 2—Alfalfa seed, prices received by Kansas farmers, percent of time price went up from Base month to subsequent month, January, 1935-December, 1954.

Chicago Luncheon to Note 50th Year of FDA

CHICAGO — A luncheon meeting commemorating the 50th anniversary of the enactment of the federal Food, Drug & Cosmetics Act will be held in the LaSalle Hotel ballroom March 26 at noon, according to Lowell D. Oranger, superintendent, division of foods, dairies and standards, Illinois Department of Agriculture. The feed industry will be represented by a sizeable number of firms.

The program for the luncheon will feature Gov. William Stratton of Illinois; M. R. Stephens, deputy commissioner, Food & Drug Administration; Dr. A. R. Miller, chief, meat inspection branch, U.S. Department of Agriculture, and S. J. Stanard, director, Illinois Department of Agriculture.

Tickets for the luncheon are $5 and may be obtained from M. G. Van Buskirk, Illinois Dairy Products Assn., 309 W. Jackson Blvd., Chicago 6, Ill.

KEEP THEIR DISTANCE

Alabama Polytechnic Institute specialists say that brood chicks should be kept at least 100 to 150 ft. away from mature poultry to control leucosis or range paralysis.

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RESEARCH

(Continued from page 3)

together with apparatus used for egg quality studies.

3. To replace the battery and brooder houses, a new concrete block structure 28 by 170 ft., with a battery brooder wing 25 by 50 ft., is being built.

4. A pullet confinement, pole-type structure with eight pens, will provide room to grow 2,400 pullets in complete confinement.

5. A new residence is being added to provide housing for three key men —project supervisor, turkey supervisor and poultry foreman.

6. A turkey confinement pole-type shelter providing 12 pens is being constructed.

7. Six small pole-type range shelters are being developed for nutrition and management studies under range conditions.

8. A turkey breeder house with eight pens for breeders, one pen for brooder hens and one pen for toms will provide facilities for 25 birds per pen.

Turkey Research

For turkey research, each eight weeks 500 poults will be hatched and marketed. Eight experimental lots of 60 poults will be used for each experimental run. Intermediate hatches may be made to check on hatchability, and to provide poults for short time experimental work. This continuous operation will provide opportunity to make maximum use of research facilities and should also achieve greater research results, Dr. Wilhelm said.

The Ful-O-Pep Research Farm is one of the oldest continuously operated feed research farms to be established by a commercial concern. Dr. O. B. Kent, feed research director, lived on the farm and was in charge of all poultry research until his retirement last summer. Dr. L. A. Wilhelm succeeded him.

George Stedman, who also lives on the farm, was manager from 1947 until he retires April 1, 1956. His successor, Vernon Cummings, is now on the job becoming acquainted with the operation.

OILSEEDS

(Continued from page 3)

on foreign nations to stop purchases of Manchurian soybeans which are curtailing U.S. exports. Trade sources say that Manchurian beans are now being offered in Europe at as much as 7¢ bu. lower than U.S. shipments.

No Change in View

Feedstuffs has previously reported that the oilseed meal market this crop year would be led by oil prices. There is now no reason to change that view merely because USDA has intentionally braked the oil flow into export fields. USDA is merely changing the timing of procurement to obtain a more stable price situation. The effective demand of the world for edible oils is not changed.

It must be emphasized that USDA officials are not attempting to influence markets in any sense. They are trying to effect some stability in edible oil prices and spread the demand for our agricultural end products over a broad period so that the influences of demand may be best reflected to the farm producer of soybeans and cottonseed.

BO-DEE — Vitamins D2 and D3 oil or water soluble and in dry ready-to-mix powders.

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Oil Meal Futures Weaker at Memphis

MEMPHIS—Liquidation of the nearby March contract by discouraged holders, depressed the protein oil meal futures market at the Memphis Board of Trade last week. Most prices were lower than the previous week's close and volume also showed a loss.

The liquidation, in an orderly manner, came early in the week, but about midweek selling lost its impressiveness and trade support in fair volume cushioned the decline.

Final unrestricted soybean oil meal prices were unchanged in the most distant months to $1.85 ton lower. Sales of 28,500 tons compared with sales of 29,200 tons a week earlier.

Eastern Trunk Line soybean oil meal closings were 25¢ ton lower to $2.25 higher. There were 2,400 tons sold, compared with 4,700 tons the previous week.

Unrestricted soybean oil meal open interest declined 66 contracts, while ETL dropped 21 contracts.

Cottonseed oil meal futures were higher on near months and off on the most distant months. There was some liquidation and some new business in nearby March, with deliveries being well taken. Cash cottonseed oil meal was steady and quiet, with the demand called slow.

There were 2,800 tons of cottonseed oil meal sold last week, compared with 9,900 tons the week before.

Sells Interest

INDIANAPOLIS, IND.—H. Waldo Matchette has sold his interest in the J&M Feed Co. to C. R. Jackson and is no longer associated with the firm. Mr. Jackson will continue the business under the same name and at the same location here, 327 Board of Trade Building.

OUTDOOR POSTERS IN USE

FORT WORTH, TEXAS — Burrus Feed Mills, Fort Worth, is using outdoor posters for the first time in a 12-month dealer-cooperative campaign for its feeds, covering poultry raising areas in Texas, Oklahoma, Louisiana, and Mississippi, reports Outdoor Advertising, Inc. The campaign began this month.

MARKETS

(Continued from page 2)

as a year ago among mills contacted, and one plant manager said present indications are that March business will be the largest for any month in two years.

Operating schedules range from a shift and a half on five days to two shifts on six days.

Southeast

There was very little change in the feed situation in the Southeast this week. Demand and mill running time are about unchanged.

Poultry feeds still hold the lead, and chick placements continue high in the broiler-producing areas. From most reports, broiler growers can "come out" at present prices, which would indicate continued high placements and feeding operations. Placements are running about 25% over the corresponding week of last year.

Local producers of feed still complain about slow movement and are anxious to get additional sales on the books for nearby months. Dairy and cattle feeds are slow, which accounts for the lack of demand for materials such as snap corn and cottonseed hulls.

With selling pressure on most all feed ingredients, purchasing agents for feed manufacturers buy only what is absolutely needed while always looking for lower prices. This has delayed the expected spring pick-up in buying, which most everyone had expected. As yet, most reports indicate that this increase in demand has failed to materialize.

Mild and open weather prevails, generally speaking, and drouth conditions seem to be relieved, except in Florida, where pastures are burned and lakes dry in some sections.

Central States

Feed business held up fairly well in the central states during the week ending March 14, although signs of a spring pick up were not apparent. Industry spokesmen said activity is about normal for this time of year and that sales probably are ahead of a year ago for March so far. An improved January and February already have been noted.

Some firms said cattle feed contracts now are being cleaned up, giving a lift to that type of feed. This is temporary, however, and on the whole, it is said, cattle feed business has been somewhat sub-par this season. Turkey feeds are getting a slow start, even though it is believed that turkey growers will buy more feed this year than last.

Ingredient prices trended lower during the period, but any advantage pricewise was just about balanced out by the higher freight rates. Order backlogs ranged from one to two days of production.

Ohio Valley

Sales of formula feeds this week in the Ohio Valley were reported at about recent levels, although there was some improvement noted in the movement of egg mashes and hog feeds. However, the return of spring weather to this area has not yet proved the stimulant that had been anticipated, and there is presently no indication that farmers are in a buying mood, other than for immediate needs.

One factor that has the trade puzzled is the continuing lag in sales of chick starters and turkey feeds, despite the reported placements of large numbers of baby chicks and turkey poults on valley farms during recent weeks. Undoubtedly, these placements will lead to increased sales of the necessary feeds in the near future. With pastures rapidly becoming available, it is to be expected that sales of dairy feeds will decline correspondingly.

With virtually no backlogs of orders, area mills are continuing operations mostly on a five-day basis with little overtime. Formula feed prices remained steady this week to up 25¢ ton.

Mountain States

Feed sales continue slow in almost all phases. Lamb feed and dairy sales are holding up, but dairy is not a large portion of the market nor is lamb feeding too big an operation.

Cattle prices still make it impossible to make a profit on dry lot feeding, and replacements into the lots are slow. The price of feeder cattle seems to remain strong. Farmers and other small feeders continue to get by with the least possible amount of formula feeds as they battle the cattle price situation. Estimates put the number of cattle in feed lots in the area at 25% less than at this time a year ago.

A few early turkeys are on feed, with the bulk to be started in about a month. Financing restrictions may hold the number down, but turkey producers will raise more than last year if money is available. A new egg law passed at the last session of Colorado's state legislature, providing more protection from import of low quality eggs, will increase the number of eggs produced in the state and should be of some help to the feed business.

Sources of finance are taking a good look at the situation, and dealers who have over-extended credit to the consumer may have trouble in

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getting banks to continue to make loans. Credit accounts are one of the biggest problems in the feed business right now.

Pacific Northwest

The formula feed business continued quiet, with most of the emphasis in the trade currently directed toward grain rations, which are being used heavily in view of the current emergency allotments of grains to farmers in western Washington.

Most of the ingredient markets were unchanged during the week, with millfeed saggy and the hay market still tight but showing signs of easing off inside of 30 days. Demand for turkey poult and baby chick rations is beginning to show some signs of life.

Pastures are still in poor condition, and farmers who have relied partly on berry crops for supplemental income are in for a bad year, because the damage from frost is very heavy. This in turn will reflect on the volume of fertilizer and farm chemicals which will be used in coming months, and may cut heavily into dealer incomes as a result. However, it is a bit too early in the year to be able to make any predictions.

Feed men look for a satisfactory year so far as chicken and turkey business is concerned, and the heavy grain feeding program that is under way at present will not affect these markets to any appreciable degree.

Northeast

Dairy feed sales were a little better last week on the basis of lower ingredient prices. The chief sales leaders, however, continued to be egg mashes and broiler feeds. Sales in general were pretty good, and so far this month have been about equal to a year ago.

Broilers held steady. There was no increase in prices but offerings appeared to be absorbed in good shape. Eggs were up 1¢ in one area and are marking time in others.

Ingredient prices were mixed, with grains on the upside. Corn advanced 2@3¢; oats were up 1@1½¢ and barley gained 3@4¢.

Brewers' grains were down 50¢@$1, and distillers grains were off $1. Soybean oil meal declined $1, and cottonseed oil meal weakened in sympathy. Linseed oil meal was unchanged but had a weaker undertone.

Running time of formula feed manufacturers averaged 40 hours last week.

There was a little interest in sacked bran last week but middlings dragged because of poor poultry demand. There was a little oversupply of millfeeds at Buffalo because of increased flour output, and prices worked lower.

And Now in EAST ST. LOUIS

—As Already in Kansas City

Staley Feeds made Electronically!

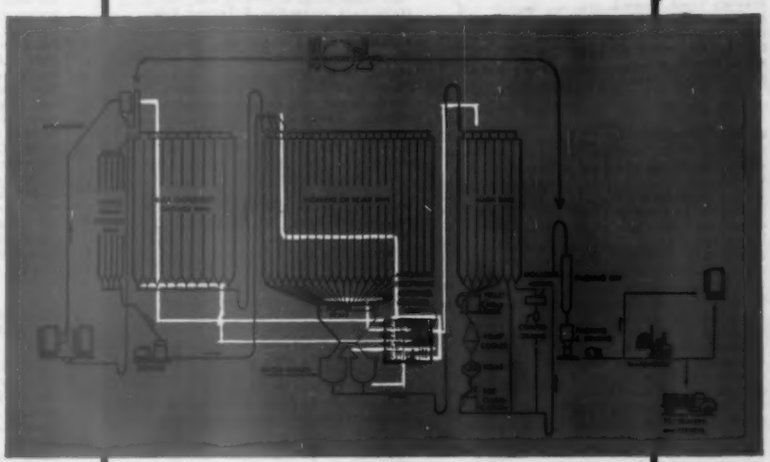
Push button feed production is now available to Staley dealers from both Kansas City and East St. Louis. We have just redesigned and rebuilt our East St. Louis plant. Now it matches our new Kansas City plant in better feeds and better service for Staley customers.

What a Truly Modern Mill Means to You —

- **FEEDS FREE OF ERROR**— The automatic electronic brain in the new Staley mills virtually eliminates the possibility of human error.
- **FASTER SERVICE**—Greatly increased speed of production means filling your orders faster in rush periods.
- **TOP EFFICIENCY**— This rounds out our efficiency program—low unit sales cost, large-lot and efficient buying, economical manufacturing.

If you want to handle the best feeds produced with modern efficiency anywhere today, send me a postcard and we shall talk to you right away about our plans and programs for a bigger and better feed business. Write: Tom Staley, Staley Milling Co., Kansas City 16, Missouri, or East St. Louis, Ill.

SCHEMATIC DRAWING OF THE NEW STALEY ELECTRONIC MILLS



The heart of a modern feed mill lies in the electronic "brain" — the electrical control system that activates, regulates and supervises the mixing of Staley feeds from bin to bag. The electrical control channels are outlined in white in the drawing above.

STALEY MILLING COMPANY

Kansas City 16, Missouri

East St. Louis, Illinois